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ABSTRACT

In this report on cooperation between British vocational and technical education and local business and industry, the chapter titles and their authors are as follows: "The Challenge of School/Industry Cooperation" (John Waddington); "Work Experience in Norfolk" (Jim Cross); "Industry Links throughout the Curriculum in Lothian" (Michael S. Roebuck); "Sunderland's Education through Enterprise Centre: Ready for Extension" (Kevyn Smith and Sue Townsin); "Industrial Tutors--Four Approaches" (Celia Hirst); "Mini-Company Developments in Somerset" (Steven Craggs); "TVEI Technical and Vocational Education Initiative Links with the Community in Durham" (Alan Stoker); "'The Cake Crew' Enterprise in Lincolnshire" (Carol Dutton and Roger Mayall); and "Work Experience: An Evaluation" (Terry McIntyre and Helen Coombes). (CML)

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TECHNICAL & VOCATIONAL EDUCATION INITIATIVE

Developments 6

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EDUCATION, ENTERPRISE AND INDUSTRY

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EMPLOYMENT DEPARTMENT GROUP

TVEI

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Developments in TVEI 6 – education, enterprise and industry

Foreword

Historically, education and industry have not been considered compatible bedfellows. For over 150 years – and, most importantly, since the industrial revolution – that has been the received wisdom in this country. During the nineteenth century it was considered improper to teach the sons of the rich anything about 'trade' and actually illegal to do so to the children of the poor.

> *The education which fits men to perform their duties in life is not to be got in school but in the counting-houses and lawyers' offices, in the shop or factory.*
> *(from an article in The Economist, 1850).*

Political reasons have been advanced for this specifically British attitude, which is not shared by our most advanced economic competitors like Germany, France, USA and Japan. They, it is said, had their political and social revolutions before they became industrialised and were motivated to develop their grandes écoles, realschülen and Land Grant colleges (in which vocational relevance was considered decent and admirable) while we clung to old educational principles designed to suit the needs of the higher social classes in an agrarian society.

Anyone who has addressed joint meetings of business people and educationalists will know that, no matter how much they appear to share ideas about the actual and future needs of the nation, when they are approached separately the industrialists tend to see themselves as consumers and the teachers as providers of the kind of people they believe they want.

For their part, the teachers often think of themselves as being part of what Kenneth Baker recently called a 'cloistered cycle' which operates largely for its own well-meaning ends.

It has been rare for the two sides to get together, except, perhaps, when it comes to career guidance and recruitment. In the first article in this compilation, John Waddington, Industry/Education Adviser to TVEI, writes, "(Prior to 1976, say) it was as unthinkable for a company to devote resources to educating those who were not potential recruits as it was for a school to waste valuable classroom time in factory visits which had no potential career motive."

This edition of Developments in TVEI has been put together to demonstrate how far (though clearly not far enough) the situation has changed in many authorities and schools.

During Industry Year 1986 a working party prepared a report on school/industry partnerships and offered five reasons why they should be encouraged.

- To develop in schools a greater understanding of industry, its operations and its essential role in, and service to, the community.
- To achieve, at a local level, better personal understanding between people in schools and industry.
- To enable those who work in industry to understand better what is happening in schools, and their achievements.
- To help schools to develop a curriculum appropriate to the preparation of young people for a changing world of work.
- To provide an opportunity for teachers and pupils to learn about how people work together in industry.

Up to a point, the world of education seems to have been convinced.

The DTI White Paper, 'The Department for Enterprise' draws attention to the contribution of TVEI.

Curriculum reform, new examinations, and the Technical and Vocational Education Initiative are also having a significant effect

> *in the classroom and are helping a large number of young people to relate the world of work to learning in the classroom.*
> *(HMSO, January 1988, Cmnd 278)*

Most of the persuasion these days is being directed at people in industry and commerce. Launching the DTI's Business and Education Initiative, Lord Young called on companies to plough back some of the gains they have made out of an expanding economy into creating links with education.

In the award-winning MSC-sponsored Video Arts production, 'Schools are your business'[1] Trevor Philpott addresses himself directly to employers; educationalists will find it helpful as a guide to making their own contacts with local or national firms.

The sheer variety of projects described in the video and in this collection of articles – they cover work shadowing, the deployment of industrial tutors, work experience, teachers into industry schemes (a particularly topical issue at the moment) and the development of joint courses and management of school enterprises – will surprise those teachers who have, up to now, thought of industry links as little more than a sophisticated version of factory visiting.

We have appeared too early to be able to report any results from the latest initiative, Professional Links in Schools, which was launched by Roger Dawe on his first appearance as Director General of the MSC. This has been set up to encourage approaches to be made directly to individual specialists working in the industrial sector.

There is no need for the editor to perform the customary duty of introducing the articles which appear in this collection. John Waddington has done this, in a thoughtful overview of the current position as he sees it. He says TVEI came on the scene just at the right time.

> *(Some teachers) would argue that TVEI has at last enabled them to pursue an educational strategy which they themselves have advocated for some time.*

He produces a useful, though by no means exhaustive, catalogue of the kind of pupil/teacher/enterprise/management-centred activities which other partnerships might wish to try out for themselves.

> *It would do much to ensure the wider involvement of industry if, whenever a TVEI module, course or programme is being planned or approved, the question was always asked, "Will industrial involvement enhance this initiative and, if so, how can such involvement be achieved?"*

A further question might be: how can we make sure that *both sides* get the maximum benefit from the exercise?

Jack Cross

* in either VHS or BETAMAX format, obtainable on free loan from TVEI A3, 236 Grays Inn Road, London WC1X 8HL.

1 The challenge of school/industry co-operation

John Waddington, Industry/Education Adviser to TVEI.

The essential challenge for any change agent (and TVEI is, I suggest, no exception) is to ensure that whatever measures are employed to bring about such change, whether they are legislative, financial or philosophical, will eventually be superceded by a climate of conviction which renders such motivation superfluous. In the context of education, the need to inject innovation into the system must be replaced by an education-led demand for change and for the wherewithal to bring it about – 'Push' must become 'Pull'.

It is not yet possible to support the contention with verifiable statistics but, I think we could agree, there is increasing evidence that a growing body of educationalists is becoming convinced of the validity of the overall direction of change, in terms of both content and delivery, which TVEI has stimulated. (Indeed some of them would argue that TVEI has at last enabled them to pursue an educational strategy which they themselves have advocated for some time).

However, in the particular context of the 'industrial dimension' in 14-18 education, the trend is not yet so clear. There are, of course, many notable and imaginative instances of real 'industrial' involvement but, despite these, the general validity of industrially-related educational content has yet, in most minds, to be proved.

This is an attempt briefly to describe the background to the current situation, the present 'state of the art', and the possible ways in which things might develop.

It is not the principal intention here to rehearse the arguments in favour

of industrial involvement – to emphasise, for example, the greater relevance and motivation which such involvement makes possible. Conviction will come from personal experience and individual opportunity to evaluate rather than from written argument and that argument will be made much more powerfully by educational professionals than by an industrial 'link man'. But, that said, we do need to develop strategies so that those directly involved may be given, and are encouraged to create, more opportunities to test such approaches for themselves.

The background

It may be helpful to remind ourselves of the background to the present situation and thus of the perceptions and attitudes which still, to an appreciable extent, persist.

Ten years ago (prior to 1976, say) almost all contact between education and industry, where it occurred, was directly motivated by considerations of career or recruitment. It was as unthinkable for a company to devote resources to educating those who were not potential recruits as it was for a school to waste valuable classroom time in factory visits which had no potential career motive.

The Ruskin Speech and the Great Debate represented a shift in thinking which was already beginning to take place. The validity of the education system in equipping young people for their careers was challenged, as were the pervasive negative perceptions of industry as an employer of young people of talent. We soon entered the 'Understand British Industry' phase – "if only young people were better informed about the 'Challenge of Industry' we would recruit a better calibre of employees and potential managers and our economic performance would, as day follows night, improve."

Both these approaches were career-oriented in concept and, furthermore, were overtly concerned with only one sector of potential employment.

We are now, however, moving into a phase in which it is becoming recognised that an 'industrial' dimension in the curriculum has a value which goes beyond narrow career, recruitment and job training implications. TVEI, is, of course, exerting a major influence in bringing about this change, concerned as it is with helping young people to prepare for the world of work through a widening and an enrichment of the

curriculum. Earlier attitudes and motivations do, however, persist and can in many circumstances act as powerful dissuaders to our attempts, through involving 'industry', to promote that wider, richer, more relevant and more motivating learning experience which TVEI stands for. Companies hesitate to become involved with schools if they have no jobs to offer; others consider that the principal change required of education is to promote economic and technological awareness; many schools base their planning of industrial involvement, where it occurs, with career implications very obviously (and sometimes exclusively) in mind.

The TVEI aims and criteria

The aims and criteria of TVEI as originally set out, and as developed for the extension of TVEI beyond the pilot phase, do not contain many direct references to 'industry' or 'employers'. There are in fact two such references in the aims of the pilots and they continue to be aims under extension.

"The construction of the bridge from education to work is begun earlier by giving young people the opportunity to have direct contact and planned work experience with local employers"; "...there is close collaboration between local education authorities and industry/commerce/public services etc so that the curriculum has industry's confidence." On a superficial reading these aims could be interpreted to mean that all that is required is the planned provision of work experience and adequate industrial representation on LEA advisory committees. In fact, every single TVEI criterion has deep implications for the involvement of 'industry'. (It must be emphasised, as always, that 'industry' must be interpreted in the very widest sense – almost synonymous with that unsatisfactory phrase 'the world of work'.) It could be argued that no criterion can be met satisfactorily without such involvement, properly planned and implemented.

Indispensable ingredient or 'bolt on' extra?

I have suggested that TVEI's ultimate success will be judged by whether or not it has succeeded in converting the 'push' of the change agent into a continuing 'pull' from the professional educationalist. This is equally true of those involved in the 'industrial' element in the process of change – without which, I have argued, the full potential of the changes cannot be realised.

In this particular context the challenge to TVEI is to ensure that the involvement of industry is not seen as a dispensable 'bolt on' extra but as an integral part of normal education which educationalists themselves see as necessary if they are to succeed in meeting their responsibilities. An integral part, what is more, of education for all, whatever their ultimate career destinations may be.

We are, as I also suggested earlier, still a long way from reaching that situation.

So, where are we, and what needs to be done?

It would be unjust and misleading not to repeat at this point that there have been some outstanding examples of very effective co-operation between industry and education in developing and delivering new learning experiences for young people. These initiatives have been instigated sometimes by TVEI projects, sometimes by schools, sometimes by education authorities, sometimes by companies and, not least, by the various industry/education organisations which have been active in this field particularly since 1976.

Recent hard evidence is lacking but observations and a report made to the National Steering Group in April 1986 seem to suggest that the *nature* of TVEI-related industry/education activities has not changed substantially since information was obtained for the NFER TVEI Management Evaluation in the Spring of 1985. (The total quantity – as distinct from the nature – of activity has undoubtedly increased due to the work experience requirement in Round 3 and 4 projects and to the impact of Industry Year 1986.) That is to say that by far the greatest proportion of activity is concentrated upon work experience and career-related involvement. Work experience and company information about careers can, very understandably, be viewed as 'bolt on' activities (although opinions on work experience will vary as much as does the quality of implementation).

It is, of course, in the curriculum area that the validity of industrial involvement has to be proved if future educationalists can be expected to 'pull' its content into the total educational package.

Some encouraging examples of where this is happening are described elsewhere in this publication. It is through the discussion about and dissemination of this accumulating experience that these positive develop-

ments will be further extended. The professional judgement of those who have already been involved and have evaluated the results for themselves will provide the most convincing arguments that others should tread the same, or similar, paths.

The constraints

A number of factors can dissuade potential participants from taking those first courageous steps.

For those in education the first inhibitor must be the understandable perception of risk – of using new and untried methods and materials; of being involved in something which they may not be able totally to control; of endangering results in other more conventional areas of school performance; and, above all, the possible risk of being involved in something which is transient, a 'fad' of the moment which will, when the dust has settled, not be proved to be of true and lasting educational validity. Reassurance on all these doubts will only come from satisfactory personal experience.

Even when understanding and conviction have been achieved, the problems of priorities, time and resources have to be resolved. In many authorities industrial involvement is seen by educational administrators as a 'bolt on' activity which is currently in vogue, but which is peripheral to the real purposes of education. This attitude contrasts strongly with those of the teachers who have actually been involved on the ground. It underlines the need to ensure that the managers and decision makers are involved in informed discussion of the issues.

Employers and managers must be able to satisfy themselves about priorities and to reassure themselves that involvement would constitute a proper use of their resources – particularly if they are accountable for them to a higher authority. They must be sure that the transaction is not all one-sided and that there are 'pay offs' which their companies might derive from such activities.

The ingredients of success

Most successes will have some or all of the following ingredients in common.

- There will have been a high level of commitment and determination on the part of certain individuals.
- That commitment will have derived from mutual understanding of the issues facing industry and education.
- There will be an awareness of the mutual benefits to be gained from such collaboration.
- The action taken will have been jointly planned and developed and will not be the result of a one-sided request or design.
- The initial targets will have been modest and realistically attainable.
- They will also, however, have been specific and possible to monitor and evaluate.
- Those responsible will be imaginative and prepared to take calculated risks.
- The initiative will have had the blessing, if not the active involvement, of senior management on both sides.

Knowledge and understanding are the most important of these and it follows that the provision of opportunities for individuals 'on both sides' to learn about the realities of the others' situations must form an important part of any strategy for closer involvement.

There must be very few instances (I know of none) in which the outcome of such greater knowledge and understanding has been other than positive. Teachers who have been on secondments or on courses involving working with industry always seem to emerge recognising the part which appropriately planned co-operation with industry can play in enhancing the learning experience of their students. Industrialists too (in those few instances where they have had such contacts – and this is a point of legitimate and urgent concern) gain a far more realistic appreciation of contemporary education and of the contribution which industry could make in the content and delivery of the curriculum.

General awareness

Although this greater understanding will be developed most convinc-

ingly at a local and personal level, concern is frequently and justifiably expressed about the ignorance of the nation as a whole (and of industry in particular) about the changes which are occurring in education and of the implications these will have for school leavers and their future employers. The new approaches to education, stimulated very largely by TVEI, cannot succeed without 'industrial' involvement. As that change extends and involves more and more schools and colleges the demands for support from employers will (as we now so often tell ourselves) increase commensurately; the present limited number of 'willing horses' will become overburdened so they may 'refuse their fences' in future.

One encouraging feature is that one encounters very few instances of companies rejecting requests for support from schools, provided always that the purpose and nature of that support is well thought out, is stated in specific terms and, once dialogue has been established, jointly planned. It is reassuring to know that there are many more people 'out there' – not least in small and medium sized businesses and organisations – who, providing these criteria are observed – would be prepared to become part of the total effort.

The whole question of increasing general awareness of current educational issues and of the motivations and disincentives to participation is one which could justify a volume on its own. Suffice it to say here that the situation is complex and fast moving, and it is hardly surprising that employers, with their other priorities and preoccupations, are disinclined to devote much time to understanding its ramifications. TVEI is working with other industry/education link organisations and with the DES and DTI to develop a joint common message designed to emphasise that all the innovations and trends (and the acronyms) are essentially concerned with developing a mainstream of change which is of crucial significance for all employers of human resources.

There is an equivalent need for wider and more general understanding in educational circles of the significance and potential provided by a greater industrial dimension in the curriculum.

The closer individuals are to actual experience of the results the greater will be the understanding; greater also will be the commitment to pursuing and developing such approaches.

One only has to read the articles in TVEI Insight and in issues of TVEI Developments to recognise the many and varied ways in which the

'close collaboration between local education authorities and industry/commerce/public services etc' is taking place. It is intriguing to discover how many initiatives, some of which at first sight would seems to have little to do with business or industry turn out to have an industrial element.

I have divided the following list of activities into different areas of focus ('pupil centred', 'teacher centred' etc) – an approach which I have sometimes found helpful in discussing various possibilities for industrial involvement with people from both industry and education. There are clearly overlaps within this crude categorisation (as there are limitless opportunities for modular or cross-curricular approaches). The list makes no attempt to quantify the volume of activity in any particular field. This can range from the universal and nationwide, for example, work experience in its various manifestations, to early tentative experiments in one location, like working with an Enterprise Agency. I also include a few supplementary or explanatory comments but would emphasise that the most valuable and practical information is likely to be obtained from the actual practitioners, many of whom have described their initiatives in the pages of various TVEI publications.

Some examples of industry/education activities

Pupil centred:

Work experience; work shadowing; interview guidance; careers advice; profiling; records of achievement; group working; communication skills; target-setting and monitoring; etc.

Although work experience is by far the most common industry/education activity many problems remain to be resolved: these include the fast-growing demand for places and the need to improve the quality of briefing and debriefing.

Careers advice, particularly if it presents direct recruitment opportunities, is an area in which 'industrialists' often feel most at home. It therefore sometimes presents an opportunity, suitably handled, to open a dialogue which may lead to other types of involvement.

Profiling and records of achievement are major innovations in educational practice which above all require industry's confidence, which can best be built up by involving 'industry' in the design stages which themselves would ideally involve some discussion with pupils.

Industrial personnel, particularly training officers, can add a valuable additional dimension when young people are undergoing experiences in connection with 'life skills' – in such things as group working and leadership exercises and in target setting and monitoring.

Teacher-centred:

Initial teacher training; INSET; secondments; exchanges; industrial courses and diplomas; joint courses; new industrial teaching and learning technologies; etc.

Many regard the allocation of industrial and educational resources to this area as being of the very highest priority. If teachers can be provided with the experience and knowledge which enables them to perceive industry as a valuable supportive resource rather than a time-consuming distraction, then the 'pulling' process will truly begin.

Among the undeniable problems, that of teacher release comes first. Industry often fails to recognise the valuable contribution which teachers can make during secondments. The possibilities of teacher participation in appropriate joint courses is seldom exploited: this is the kind of initiative which could be facilitated by the provision of free or subsidised places. The secondment of industrialists into schools is seldom achieved, thought the educational role which managers, supervisors or technicians can play in problem-solving and project situations is not yet widely recognised.

We are now much concerned with continuing education. It will help teachers in their task if they are aware of the new teaching and learning technologies which industry is beginning to use.

Technology-centred:

Technological projects; problem solving; SATRO activities; engineering clubs; design competitions; information technology; new curriculum content; practical science and mathematics; etc.

Collaboration in the area of technology is producing powerful new learning experience for both teachers and students and is one way in which educational 'pull' is most strongly developed. Teachers find themselves in the situation of learning and problem-solving with their pupils as often as they are teaching them. Industrial support and

knowledge of industrial applications can be of real value to teachers in such situations.

The involvement of industrial technologists in the development of the curriculum and of learning material is beginning to become a reality and it constitutes an area in which common language facilitates dialogue and joint working. It is, moreover, one in which well-designed projects and tasks can provide outcomes of real value to the participating companies. In the area of information technology the creative and innovative capabilities of young people are becoming almost legendary, particularly in the uses and development of hardware and software.

Enterprise-centred:

Mini-enterprise companies; Young Enterprise; 'Real' business activities; co-operating with enterprise agencies working with charities, business games and simulations, etc.

Mini-enterprise companies in their various forms are becoming a fairly common feature of the educational scene. It is one which has received particular encouragement and the extent of such activities in schools does seem to suggest that their cross-curricular educational value is being acknowledged.

Business games and competitions have been developed and provided by many organisations as their contribution towards increasing economic and business awareness. They can provide useful material as part of a wider educational aim but they can also become dominated by the competition itself and are often extra-curricular, involving only a limited number of enthusiastic participants.

Industrial contributions to education frequently have significant cross-curricular implications. This is probably particularly true of enterprise activities, which offer learning experience ranging from the motivation of enterprise through effective communication, management and control to marketing strategies, and so on – all involve the use of language, mathematics, and some knowledge of economics.

It is an area in which people from industry feel on fairly familiar ground but it is one in which many teachers feel strongly the need for support. The potential for co-operation is considerable.

It is also an area in which, I suggest, there is considerable scope for new directions of development. Mutuality of benefit in school/industry activities is a powerful incentive to involvement. Schools are increasingly becoming capable, through new skills and new equipment, of providing valuable services to industry, particularly to small businesses, on a commercial basis (in market research, advertising design, computers, languages and so on). There are, of course, problems to be overcome, not least that of competition with small struggling businesses but there is scope for imaginative development. We already have at least one example of a school which is working directly with its local enterprise agency.

Another interesting example of enterprise in education is that of a school which has engaged in local market research, product development, (Tee-shirts and so on), sales promotion, and a marketing evaluation exercise on behalf of a national charity.

Management-centred:

Management courses; management of change; staff development; staff appraisal; curriculum development; subject advisory committees; governing bodies; etc.

There are two ways in which industrialists can become involved with education in a management context. There is considerable common ground in the role of management itself, and one should not underestimate the contribution which industrial managers can make as members of governing and advisory bodies.

There are one or two notable national examples of industrial participation in educational management training. After all, the management of change raises similar problems whether one is involved in industry or education . Staff development and appraisal are important current educational issues. Although industry and industrial consultants and trainers have devoted much time and many words to such topics, they cannot be said to have found all the answers: there is scope for addressing the issues on a common footing and from a common starting point. Joint seminars or local discussion groups are fairly rare and could undoubtedly be increased, often with the added benefit of discussion and action extending into other areas of the industry/education field.

Government policy is to encourage the greater participation of industrialists in government bodies and in subject advisory committees. Again there is scope for far more and, importantly, far more informed, participation in the education field.

Conclusion

I subscribe to the view, held by many others, that an 'industrial' involvement in education is about far more than careers advice or offering for a couple of weeks the unusual experience of students working with adults. It can bring a new sense of relevance to a young person's educational experience, with the increased motivation which that implies. It can bring new attitudes to learning and can help to underline how important it is that everyone, child or adult, should find out information for themselves and take continuing responsibility for developing their own skills and capabilities.

The industrial dimension has not yet earned for itself a widespread recognition of its wider educational validity. This will best be achieved by continuing to build up a 'critical mass' of respected professional teachers who have been enabled to assess for themselves what it has to offer.

The major inhibitor is lack of knowledge or, more bluntly, the ignorance of each sector about the activities of the other. Thus it is hardly surprising that the potential for constructive (and mutually beneficial) co-operation is only infrequently perceived. It is to be hoped that the attempts to develop and project a nationwide message about linkages between education and industry will succeed and that this will lead to useful support for the crucial local efforts to promote more joint activity.

Priorities for action will of course vary with the particular needs of different areas but giving teachers opportunities to learn about industry and to develop their own strategies must rank high everywhere.

Work experience has been extremely valuable in a number of ways, not least in opening up a dialogue between schools and their local firms. Much needs to be done in most areas, however, to improve its quality.

The areas in which there is probably most scope for imaginative new developments are those of joint curriculum development and enterprise education.

I have tried not to ignore the very real and practical difficulties of time and resources which confront most of us. Nothing written here is intended to suggest that massive and wide-ranging change can be achieved overnight, but it is only by being aware of the possibilities that balanced judgements of priorities can be made.

TVEI and its officers are change agents, with a responsibility to initiate and stimulate innovation. It would do much to ensure the wider involvement of industry if, whenever a TVEI module, course or programme is being planned or approved, the question was always asked, "Will industrial involvement enhance this initiative and, if so, how can such involvement be achieved?"

2 Work experience in Norfolk

Jim Cross is a senior TVEI Careers Officer who operates out of a Centre in Lynn Grove High School, Great Yarmouth. He reports here on work experience programmes developed during 1985 and 1986 in several local schools and involving, he says, not only 500 students but thousands of working men and women "who make small sacrifices during the week in order to contribute to the success of the placement."

Though he is enthusiastically confident about what can be done in this field by teachers, he believes that the kind of progress which has been made may not continue unless some kind of outside agency takes over a great deal of the administration required to run a streamlined scheme.

When TVEI started, many commentators assumed that with the advent of 'new' subject areas piloted by TVEI there would be a new type of 'TVEI' work experience. We started by questioning the assumption that TVEI was a vocational course requiring associated vocational work experience. Instead we adopted the idea that the 14-16 stage of TVEI was *not* vocational education but rather general education learned through a vocational focus. As such the student's first work experience did not need to be vocationally specific and did not need to be targeted towards accumulating a narrow range of vocational skills. As the students' progress through the scheme their *second* work placement (in the 16-18 phase) could be more vocationally orientated.

Our aims

We thought about what we wanted to achieve in work experience and how we were going to put that in educational terms. One of the options open to us at the beginning of TVEI was to define exactly what we wanted

from our placements and, armed with those criteria, canvas industry to generate the ideal learning programme.

We found we faced two problems

- We didn't have the necessary experience to discriminate against placements which we felt wouldn't satisfy any elaborately drawn-up criteria.

- Local industry hadn't been asked to participate in anything like this before. If they were asked to participate in something that had 'social-educational, motivational and anticipatory' elements they probably wouldn't feel qualified to take the plunge, at least not in sufficient numbers.

So we deliberately kept it simple. Our aim was to provide sufficient opportunities for TVEI students to spend one week experiencing the disciplines and relationships that occur in the adult working world.

We kept it simple for our own benefit as well as for the employers. They would instinctively know if they could offer a student a placement that would be of value or not. Our vetting procedure for placements in that first year was unsophisticated. The employers had to satisfy the insurance and the health and safety criteria; otherwise as long as we were convinced that they were working within the spirit of the enterprise then we accepted their placements as meeting our objectives.

Canvassing for placements

To recruit willing employers we

- canvassed companies by letter

- made follow-up telephone calls

- paid visits to companies

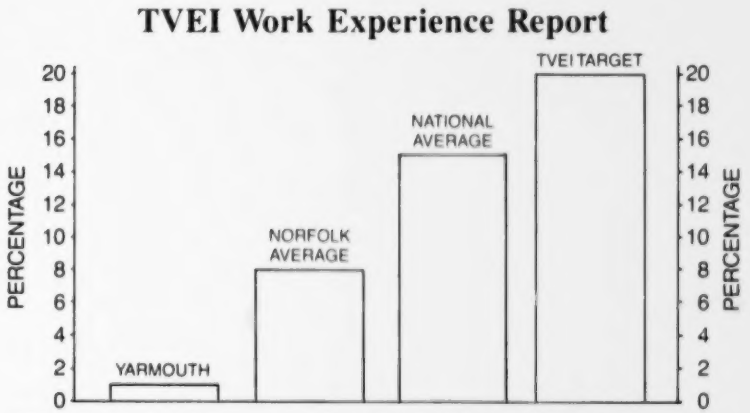
- used adult contacts, like parents.

Most work experience programmes use these approaches and would agree that by far the most successful means of attaining placements is by making personal contact with the employer. It can never be emphasised

enough that if one approaches employers asking if they would support education the answer is invariably 'yes.' The goodwill that the world of education enjoys within the normal working population is still considerable.

The first year

In 1985 we were struggling to achieve our target of over 200 placements. In many ways this was to be expected. The following graph indicates how low a base of existing work experience we were working from when we started.



The figures represent the percentage of those who will leave the 5th year having undertaken a period of work experience of at least one week's duration.

In effect we had to establish a work experience market from 1 per cent up to 20 per cent 'saturation' in a period of one year. Although we struggled during that first year we did achieve our target. It was indicated to us before we started that the market was already saturated and it wouldn't be able to support our placements. In the end we found that this was not the case. It isn't possible to suggest exactly when the market will be full but I believe a target of 20 per cent of fifth years on work experience would be a conservative estimate.

Year two

In 1986 our aims were

- To maintain the co-operation of a large body of sympathetic employers by consolidating the best placements that we acquired in 1985.

- To generate a surplus of placements so that there would be an element of choice for the students.

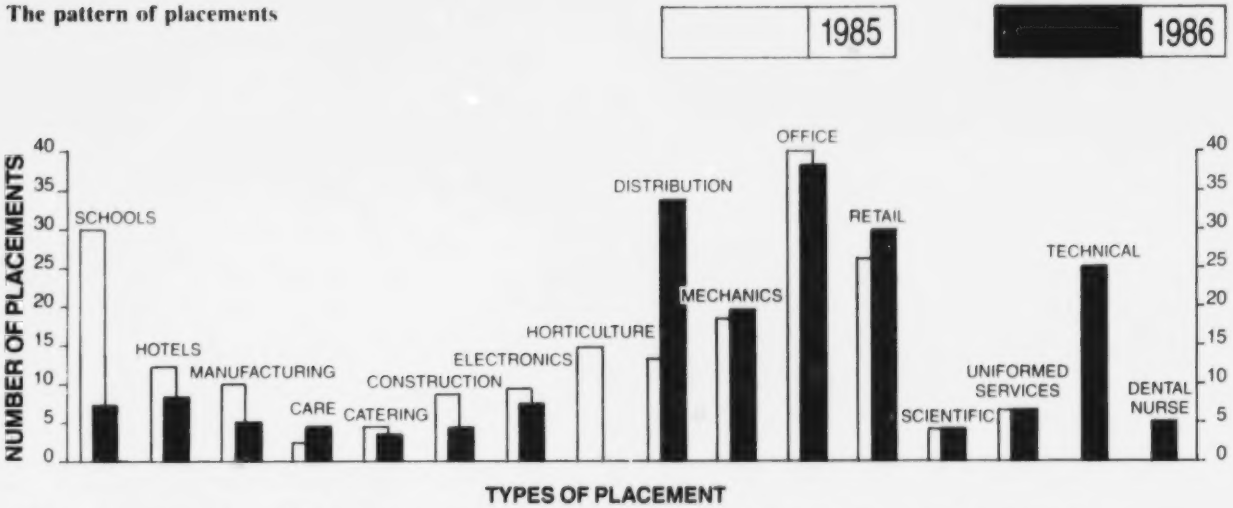
- To increase the range of occupations covered by trying to develop a balance between service industries and manufacturing organisations.

We feel we largely achieved these aims. By the end of the second year we felt we were becoming knowledgeable enough about the market to start tailoring the placements to our requirements.

Breakdown of the work experience placements into occupational areas

	1985	1986
TOTAL PLACEMENTS	190	198
No. OF EMPLOYERS	62	69
OCCUPATIONS		
SCHOOLS	30	6
HOTEL	11	8
MANUFACTURING	10	5
CARE	1	4
CATERING	4	3
CONSTRUCTION	8	4
ELECTRONICS	9	6
HORTICULTURE	13	0
DISTRIBUTION	12	33
MECHANIC	18	19
OFFICE	40	38
RETAIL	26	29
SCIENTIFIC	2	2
PUBLIC SERVICES	6	6
TECHNICAL	0	25
DENTAL NURSE	0	5

The pattern of placements



1. As can be seen from the graph the figures for the second year correspond quite closely with those of the first year. The obvious differences are in the technical, school and distribution occupations.
2. In the first year when we were a bit short on placements the tendency was to "top up" with school placements. Despite the fact that these proved very popular placements we felt they didn't offer enough adult contact. The policy was to try and restrict access to school placements and encourage use of the commercial and industrial placements we had generated.
3. The extra technical placements were greatly enhanced by the generous support of British Telecom and the Technical Services Department of the Waveney and District Health Authority.
4. Distribution placements were predominantly warehouse placements linked to the catering, retail and oil supply industries.
5. The drop in horticulture places was the result of the decision not to use the Borough Councils Leisure and Amenities Department. We felt that the management were very helpful but the supervision 'out in the field' was patchy.

The Job Centre

During the campaign of 1985 the selection of pupils to fit into appropriate placements was largely the prerogative of the TVEI director. It was felt that in the first year we couldn't risk the goodwill of employers by allowing students to get into the wrong placements. The dearth of places didn't help. We evolved a system of allocation that relied on the paternal "this is what we think is good for you" philosophy.

It would have been tempting fate to try this for a second year. If we were going to improve our preparation for work experience by a more structured briefing, then the students would rightly feel aggrieved if they were unable to exercise any influence on where they would end up.

So the idea of the Job Centre was born. We put the descriptions of all the placements on job cards and pinned them to a job board. The students view all the cards before selecting the one most appropriate to them. They are then interviewed for the 'job' so they have to justify their choice.

The reservations that are often levelled against too much choice is that it could harbour conflict by raising expectations, with the best placements being snapped up quickly, leaving disappointment and even resentment in its wake, and there is always the possibility that the only applicant for one particular job will be somebody entirely unsuitable. Were we not making a rod for our own back in encouraging the idea of student choice?

We decided that the benefits of involving the students in their choice of destinations outweighed the possible disadvantages. After all, directors would still hold the right of veto, and a system of an open market does at least free the director from accusations of misrepresentation.

Realistic choice-making

Before the job cards were put up there were classroom sessions to explain why the students were going on work experience and what we hoped they would learn from it. We also stressed that we were making it as realistic as possible. If they were going into the real job market they would be able to look at all the jobs available but they couldn't expect to be automatically given the one they most wanted. Nevertheless, the students miraculously seemed to sort themselves out almost perfectly. Even in cases of over-subscription they seemed readily to accept their alternative choices.

The other advantage is that it saves a lot of time, mainly because it transfers the responsibility of decision-making from the director to the student. This devolved decision-making is not only quicker but often leads to more accurate diagnosis of the most appropriate placement for that individual.

Briefing and debriefing

A group of three consisting of myself and the careers teacher and TVEI director of Oriel Grammar School, put together a briefing package for the students. We used the experience gained from the first year, plus whatever we could plagiarise from various sources. The teaching materials we thus devised were used throughout the consortium. It is always difficult to say how successful they were but I was quite pleased with them. More importantly I think they represent a package that can be used by any teacher to brief students prior to a placement. In the end I was able to be present at all the briefing sessions but it shouldn't be difficult for a newcomer to the scheme to pick up the reins.

Another important consideration is that the briefing can be carried out by one person if necessary. It is the debriefing which uses a lot of staff time. When the students come back from placement they are often 'buzzing', seeking an opportunity to articulate and share their experiences. Although this can be done in a big group, the result is that students are often queuing up to talk. If any situation lends itself to small group counselling it is the handling of the feedback of work experience. There is a temptation to try to avoid further disruption to school lessons so soon after a full week's absence, but I genuinely feel that important learning points can be lost if debriefing is sacrificed to expediency.

The Oriel Pilot

With TVEI we are obviously experimenting to find the best way to organise work experience. What we wanted to do was try to develop the ideal package of preparation and follow-up. Just how feasible would it be to include briefing packages for employers? What are the best strategies for involving teachers new to work experience? What are the cost implications of extending this 'ideal type' across the consortium?

TVEI directors are always heavily involved in work experience. What we needed was a school which was prepared to offer extra staff resources. In Ian Clayton, Oriel Grammar School had an enthusiastic Careers

Teacher who was prepared to take on a central role in designing and implementing what we hoped would be a package that would become a model for preparing students for their placement. In our experience it was the first time a teacher other than a TVEI director had played such an active role in this kind of organisation. It was also the first time we had given any briefing to a team of staff before they went out to visit the students on their placements.

Equal opportunities

When we set up work experience schemes we are exerting a powerful influence on how the students perceive themselves in the adult world. In the work placement 'market' there are the same conflicts of supply and demand that there are in the real labour market. There is the possibility that in our canvassing of placements and in the process by which we allocate those placements to students we could be reinforcing the same patterns of sex discrimination that we know exist.

This was confirmed in our pattern of placements

- Very few of our practical or technical placements were taken up by girls.

- There were twice as many girls as there were boys on the office and retail placements.

There are three main reasons why I think these figures look worse than they are:

- The cohort we were working with was to a large extent already unbalanced. In 1985 all 80 TVEI engineers just happened to be male. Similarly the majority of the Community Care and the Commerce and Retail students were female. If we assume they wanted a placement that would complement their studies then it was inevitable that the work experience statistics would reflect the bias already apparent.

- There are also problems in canvassing employers. If I approach an employer for a placement it is normally easier to obtain clerical or care placements than it is to get practical ones. We found we had too many placements that were traditionally 'female' and not enough traditionally 'male' ones. Our sex stereotyping problem was trying to

persuade employers to accept boys in what they considered to be 'girl' jobs, and then persuading the boys to take them. From a Careers Officer's point of view this represented a reversal of what is perceived to be the traditional problem of sex stereotyping, but it doesn't hide the fact that little progress was made in getting girls into traditionally male employment.

- In 1985 we faced two inhibiting problems. There was the imbalance in the student cohort and a very restricted range of placements were on offer.

- In 1986, however, that imbalance was less apparent. The intention was also to allow a greater degree of student choice by using the Job Centre approach. This should have allayed fears that the 'placing' of students by directors was a possible area of discrimination. Nevertheless, what actually happened was that the boys were now freer to opt for the greater number of 'male' jobs and the girls still opted for those considered to be 'female' ones.

The conclusion must be that if you create a work experience market where students can exercise consumer choice they will tend to go for the familiar stereotypes. The greater the choice the more likely the stereotypes will be reinforced.

Seeking solutions

As I see it there are three possible solutions to the problem of sex stereotyping as it relates to work experience placements.

- Improve careers education or life skills packages to make sure that students have addressed the sex stereotyping issue before they choose their work experience.

- Restrict the choice available by suppressing popular placements. Towards the end of 1986 we were aware that given the choice the girls were opting for school placements rather than some of the other employer-based programmes. Rather than disappoint some of our new employers whose placements were going empty we started to take the school placements off the board. We found we could therefore engineer the destinations of students without necessarily incurring student wrath.

- We could decide that there is no real problem. Choice of a placement is not the same as a career choice. Despite the fact that the student may have chosen a traditional placement it doesn't follow that they will automatically have their stereotypes confirmed. Work experience may allow students to re-assess their perceptions of traditional male or female roles. That orientation process could be more important than the particular choice of placement they make at the end of the fourth year. This would allow us to say that experience contributes to equal opportunities by exposing students to the possibilities of different role models whilst on placement.

Work experience and the curriculum

The Schools Council Report on 'Work Experience in the School Curriculum' says

> "If the experience forms an integral part of a wider programme, such that there is relevant work preceding the experience and the experience is drawn on in subsequent activity, then the benefits to students are immeasurably increased."

How far does our work experience programme exist as an 'integral part of a wider programme'?

Linking school subjects to placements

Initially the MSC manuals indicated that TVEI would require planned work experience, presumably to indicate that it had to take place inside some coherent framework. One of the original intentions was that the student choice of work experience would reflect the vocational options they undertook at 14-plus. As our project has shown, realising this aim can be more complex than it first appears.

- If a student is doing a Community Care course it would seem reasonable that the course could be structured to lead up to and away from a week of work experience in a care placement. However, that same student could also be doing a course in Commerce and Retail. They only get one period of work experience but they take two TVEI options. They may want to spend that week learning about office technology. Any teacher planning the Community Care course cannot assume that all the students doing that course will get a work experience placement related to the syllabus content. This makes it impossible for a teacher to build in common assignments or projects.

- The available TVEI options don't cover all the possible placements open to a student. For example, a student might want to spend a week with a builder in the construction trade, or may want to work in horticulture. These choices could tie in with an existing school subject but neither relates to a TVEI option. Alternatively a student might want to spend a week with the Fire Service or the Police Force, which are the sort of jobs which are very difficult to pin down to any subject area.

- It is not always possible to supply enough placements for certain popular options. An obvious example would be the demand for numerous hi-tech places.

These are the practical difficulties in trying to integrate work experience into the curriculum by using TVEI subjects as an extended preparation for their placements.

A cross-curricula initiative?

The problem then becomes one of trying to relate the work experience to the curriculum without building it in as an integral part of a single subject.

The obvious place for it is in one of the areas of the curriculum which are truly cross-curricular. A Skills for Living lesson or a Careers lesson would seem the obvious place. The problem then becomes one of trying to identify the TVEI cohort. In most of our schools the TVEI students never come together as a recognised group until they board the boat for a residential period in Holland. It becomes impractical for teachers or tutors to run a session related to work experience if the class contains non-TVEI pupils who aren't going out. To give them any special preparation for work experience it is necessary to withdraw them from normal lessons to give them the necessary briefing.

The result is that work experience preparation has to go on outside the normal school timetable. Disruption is inevitable. Normal examination classes will still go on without the TVEI students present. Staff invariably complain about the TVEI students missing important lessons and the inevitable dislocation of catching up. Preparation has to be brief and is largely taken up with administrative details. Any extended group work or role-play sessions are not possible. The problems associated with "trying not to miss too much of the syllabus" are directly opposed to the intention of integrating work experience into the curriculum.

In effect work experience ends up as an extra-curricula activity.

Structural solutions

When companies give of their time and money to take on students for work experience it is not unreasonable for them to expect the schools to spend some time in making certain the pupil is properly prepared and that the experience is well evaluated afterwards. At the moment that burdens falls on the TVEI directors working with a limited number of lessons. To improve that situation we could

- Make work experience part of an assignment or project that has a bearing on an exam grade.

- Put all TVEI students into a recognisable cohort for non-examinable lessons such as Careers or extended tutor groups. That way we can ensure uninterrupted access to them for such things as placement selection, briefing and debriefing, without having to withdraw them from other parts of the timetable.

- A whole school approach – rather than work experience being the prerogative of just a few students administered by a few staff, the whole school could go out and all the staff become involved in the experience.

Participation across the year group would allow every area of the curriculum to become relevant. All those teachers teaching fifth years would become available for visits, INSET, and preparing individual work experience profiles. Lessons that previously had little industrial contact could be used for preparation purposes once it was established that all the students in the class were going on work experience. (English lessons for letters of application and mock interviews. Geography lessons for industrial surveys, tutor groups for job choice and so on).

My personal opinion is that whilst we often talk about teaching certain skills across the curriculum it isn't all that easy to achieve. Even such promising areas as communication skills, social education and information technology tend eventually to become discrete subjects one opts for at the end of the third year. Therefore even if work experience suddenly became compulsory for all it doesn't automatically follow that every subject teacher will take part in preparations for the placement. Yet while work experience is the prerogative of the few it will remain difficult to relate the experience to what goes on in the rest of the school.

Are fourth years mature enough for work experience?

It has been suggested that students of 14 and 15 are too young to go out on work experience. It should wait until they are mature enough to benefit from it, probably in the 16-18 phase.

I suggest that evidence over the last two years has shown that the students have adapted remarkably well to their placements, and very rarely does inexperience get the better of them. It is probably a fault of those of us in education that we underestimate the resourcefulness of youngsters in our charge. The anomaly is that TVEI seeks to delay the entrance into the labour market until they are 18. The idea of lengthening the process of transition to work is a fairly common one. The assumption seems to be that students will be better prepared for work if they lengthen their stay in education. In the '50s and '60s research indicated that 15-year-old school leavers made very rapid transitions to work. (Roberts K. (1984) in 'School leavers and their Prospects', Chapter 3 "Post War Youth in the Labour Market"). My belief is that today's fourth years could make similarly rapid transitions if they were required to. When given responsibility the students act maturely. It is a mistake to assume that we should protect them from that responsibility for as long as possible.

"It was great. They treated me just like an adult"

This is the most common observation the students make when they return from their placements. It is the main difference they cite between school and work. They always distinguish between the way the teachers treat them in school and the way other adults treat them in the workplace. A school is a closed institution in which it is difficult for pupils to enjoy parity of esteem with their adult peers, though it has to be said it doesn't seem to adversely affect the youngsters. It is difficult to see how such a problem could be solved without radically altering the whole structure of education. It comes down to the concept of individualising education. In school we have one adult teaching 25 pupils. During a week of work experience there are often 25 adults teaching one pupil.

Students commonly observe that they enjoyed great variety of work. The novelty of the situation obviously contributes to that variety. Still, it doesn't entirely make sense. At school they move about regularly into different environments; they study several subjects during the day, all presented to them in different ways, yet when they spend all day stuck in a small office or garage they enthuse about the variety.

Charles Handy once pointed out that it may be this constant rotation of tasks and of classrooms which itself produces apathy and disinterest: in prisoner of war camps the Koreans used to switch work stations and shift the focus of jobs because they realised it demoralised the prisoners and made them more lethargic and easier to handle.

Perhaps the school timetable is trying to be too varied: that the result is not variety but too many subjects being taught by the same academic methods.

It is true, too, that some of the satisfaction the students get on placement is from seeing a task through to its completion. This requires time. These task-orientated assignments could be transferred to an educational setting if it were not for timetabling constraints.

Who will run work experience after TVEI?

As I see it there are three options

1. Individual schools running their own work experience schemes

There is nothing to stop a school allowing a keen member of staff to canvas and organise placements just for that individual school. In this authority Flegg High and Acle High have been running independent and successful work experience schemes for years.

There are advantages in this.

- The school has control over the timing, duration and balance of its placements.

- If the school feels it enjoys strong links with industry through its governors or its PTA then it may exploit those contacts for its own benefit.

But there are disadvantages too.

- It can be very expensive on staff time. Not only does the teacher organising it need constant access to an outside telephone line but it has been estimated that it would need 0.5 of a teacher to operate it each year. (Schools Council Industry Project 1979).

- The school will be in competition with others for placements. If you have a lot of schools in a small geographical area this can create problems, not least from the employers' point of view.

2. Project Trident

This London-based organisation arranges for a senior industrialist to be seconded to the LEA for two years. He or she becomes a full-time work experience co-ordinator working on behalf of a consortium of schools.

Although the LEA does have to pay for a secretary, an office, all the expenses incurred in travel, as well as a £5,000 affiliation fee, it often makes an experienced industrialist available free of charge.

This means that

- schools can concentrate on the educational benefits of work experience in briefing and debriefing, leaving the canvassing, insurance, and administration problems to someone else

- employers have the benefit of knowing they will be dealing with only one co-ordinator and can respond to requests for placements with greater confidence.

On the other hand

- Project Trident insist on a three week placement as an article of faith. They are convinced that this is the minimum time required for a youngster to get the best out of a scheme.

3. Using the Careers Service

This model would resemble the present situation where the TVEI Careers Officer canvasses local industry on behalf of the consortium of TVEI schools. Any future role would probably include the whole of the service and its support staff rather than being the responsibility of one individual.

- The Careers Service could make use of its already well-established industrial contacts.

- It has the benefit of being open from 8.30 am to 5.00 pm every working day of the year, an important point when dealing with employers.

- It has a powerful computer database of employers which could be harnessed for canvassing purposes.

But the service is already overworked and would need to reconsider its priorities before taking on this extra responsibility.

A personal note

When I started co-ordinating the work experience I anticipated it would be difficult. I wasn't to be disappointed. In 1987 I was again ploughing through the processes that brought in over 200 placements with over 70 employers. To help me complete this task I had a full-time admin officer, six TVEI directors, and two years of hard-won experience. The wealth of detail and the volume of paperwork was again considerable.

My personal belief is that although teachers have the skills to take on this burden, they probably haven't the time or the administrative support. If an outside body could take on this task and present the schools with an allocation of placements then I feel more schools and more students would become involved in work experience. An outside agency, whether it is Project Trident, an LEA appointment or the Careers Service, can take on these tasks more efficiently, both by streamlining administration and by planning the timing of placements. Without it there is the danger that the progress made over the last two years could suffer a reverse.

3 Industry links throughout the curriculum in Lothian

Michael Roebuck, Lothian Project Co-ordinator.

Introduction

In this short article I intend to focus on the 'process' of developing industry links in the curriculum. I will trace it from the time the scheme started and follow it through the first two years of its life. I will not spend time on the details of particular strategies like work simulation or work experience, since they are outside the scope of this article. Practitioners will appreciate that the details of particular links initiatives are less important than the processes through which they are developed. I include, as an appendix, the timetable of development.

The process of development

When TVEI was first implemented in the Lothian region, industry links was far from its first priority. In common, I suspect, with most schemes, this was to have something to teach to young people and to have the equipment to do it with.

We assumed at first that it could be left to teachers to determine what was to go into our subject enhancements and modules. After all, SCOTVEC modules had already been written and 'only' required 'fleshing out'. It was at this stage that we realised that we might have problems. Who was going to teach Control Systems or Electronics? The Technical and Physics departments of course! But what relevant experience had they had? Were they familiar with the most recent developments in technology? How could they begin to create realistic learning situations and put together a meaningful curriculum? Some teachers might feel that they were able to judge which experiences would be relevant and

meaningful but, to quote my colleague Pat Sweeney, TVEI School Co-ordinator, in a TVEI INSIGHT article (No. 9 – June 1987), "A mighty arrogance, I would suggest, for most of us, and most certainly for myself. People in schools use wordly language while remaining a remarkably introspective bunch. We assume a sort of innate omniscience and are at best uncomfortable and at worst resentful should anyone beyond the confines of the school have the temerity to comment critically on our endeavours."

The team of TVEI co-ordinators had to decide how to involve industry in the development of the curriculum in Lothian's TVEI scheme. There didn't appear to be any statement of regional policy on industry links.

Could we learn from YTS? What existing organisations might help us? Project Trident existed in our area. Could we use them? What about the local Chamber of Commerce or Understanding British Industry (UBI)?

There was clearly a danger of zooming off in different directions before we had decided what we wanted to achieve. As a result, we determined to spend some time developing specific objectives and defining precisely what we meant by industry or the community. At the same time, we were only too aware of critics who might see this kind of activity as fulfilling their worst fears about TVEI. A recent quote from a former chief educational adviser illustrates this point. "The imposition by bribery of the Technical and Vocational Initiative with all its connotations of sending the poor to the tools and the better-off to the varsity..." suggests that TVEI is recreating the grammar school and secondary modern divide, whilst at the same time providing narrow vocational training for the working classes. In a similar vein, Clyde Chitty asks, "Should the 'able' be selected for the academic work; the practical work reserved for the 'less able' and the working class? Or might we begin to think in terms of a new synthesis which combines education for work by hand and brain for everyone alike, since the life development of individuals – whether at work or not – requires the combined education of both?"
(Chitty in Ben C and Fairley J – Challenging the MSC, page 80)

We concluded that linking our curriculum development firmly to local industry, business and the community would not mean that it would become narrow vocational training. We held the opposite view; that it would create relevance and motivation in the curriculum and would contribute to the personal development of all our young people.

However, we were careful to stress that we wanted to involve trade unions as well as the management side of industry and that we saw the community in terms of voluntary organisations and community groups as well as profit-making organisations. This debate was an important one both in terms of team-building and creating a strategy which had the team's confidence. (The team consisted of four school co-ordinators, one college co-ordinator and one TVEI careers officer.)

An important aspect of this debate was our strong feeling that all the learning situations which were to be developed through linking teachers and industry should be integrated into the curriculum and should not exist as identifiable stand-alone activities which would be seen to be less important than other work carried out in the schools. Experience has shown this to be a wise decision: there have been attempts to devalue some TVEI activities in comparison to 'academic work'. Some teachers felt that sending pupils out on work experience in their 'O' grade examination year would jeopardise their chances of examination success. We were, however, able to point out, amongst other things, that the work experience programme could lead to the achievement of a SCOTVEC module, one of six for which TVEI pupils can be certificated by the end of S4.

It is also interesting to note that in questionnaire responses from over 200 TVEI pupils in S4, work experience was rated by far the most useful and enjoyable module. As a result, we have deployed our industrial contacts within the context of Scottish Standard Grade and modular Action Plan developments and, in so doing, maintained curricular integration.

Once we had a philosophy, we had to develop our strategy. The team decided that we ought to link teachers with specific industrial contacts. It is perhaps worthwhile, at this point, explaining our structure for curriculum development. Four local schools are involved in the scheme. For each area of development we established a curriculum development group managed by a school co-ordinator. A suitable member of staff was nominated by each school to join each group. They were all volunteers. So each curriculum group consisted of four staff, one from each school. We decided to encourage teachers to examine the possibility of engaging representatives of local industry in these curriculum groups. Our careers officer, Morag Arnot, produced a newsheet to explain our policy since we started with something like 15 groups (four teachers per group) and now have about 20 groups (80 teachers).

The newsheet explained that though the scheme had only been in operation a few months a number of contacts had already been made at various levels within the scheme. These contacts had been put in touch with curriculum groups, though in a few cases the contact preferred to relate to a specific member of staff in a single school. So, in further discussion, it was agreed that within curriculum groups one teacher should be responsible for maintaining the link. It soon became clear that the use of industry was patchy; it largely depended on the attitudes of the participating teachers. It was therefore decided that further possible contacts would be identified with groups and the impetus would be given to the process by a LINKS launch. It was at this stage (at the end of the second term in the first year of the project) that we decided to use the slogan LINKS to describe this activity. We invited some 25 representatives of local industry to the launch, together with a similar number of teachers. This involved our career officer in a great deal of work.

The rationale of LINKS was explained to the audience and there was a presentation by a training officer from Ferranti; we put on a work simulation day which was to act as an exemplar of good practice. Teachers were twinned with their industrial counterparts and asked to begin to negotiate mutually beneficial links. We suggested they might arrange to visit companies and organisations and invite their representatives to come into the schools. We gave examples of what had been done elsewhere.

We were able to establish a LINKS directory, which listed teachers and industrialists who had developed an interest in working together. At the end of the academic year we were able to ask the co-ordinators managing the curriculum groups to review these teacher/business/community contacts so that the co-ordinating team could see what progress had been achieved. The picture which emerged was promising but by no means entirely successful. There were real successes where teachers had involved industry in helping to create a relevant curriculum – a production manager in a factory using pneumatics extensively had helped to develop a control systems module; a personnel manager had been involved in the development of a personal development module called Life and Work; a hotel representative provided a hotel kitchen as a more attractive context for learning as an alternative to a simulated situation in school.

There were, however, notable areas of failures, where teachers had not used the contacts that had been established. We asked why this was so. Our discussions with groups led us to believe that some teachers were reluctant to pick up the 'phone to request co-operation from their opposite

numbers, or they simply didn't see LINKS as necessary. One group held the view that since their course had been devised nationally, with an industrial representative on the committee, that was somehow enough. And there was the safety factor. Keeping children in classrooms provides a safer environment in the sense that teachers believe it is easier to maintain control there. It also calls for less preparatory work. We felt that at the end of our first year in TVEI we had achieved a 50-60 per cent LINKS success rate.

At the beginning of the following term we decided to renew our efforts, using the existing support system. We had already tried to contact the Chamber of Commerce but, after arranging an interview with the Chief Executive, waited in vain for him to turn up. Further correspondence went unanswered. However, our work with UBI had been much more positive and following exploratory discussions with Bob Currie, UBI Director, we developed links with CBI council members. Direct contact with industry representatives at director level allows for joint consideration of how a company might LINK in a variety of different areas of educational activity. In Scotland, we do not have organisations like Schools Industry Partnership (SCIP), though we do have a network of schools industry liaison officers (SILOs). The obvious lesson to be learned from all this is that one must make use of all the umbrella organisations covering industry but be very clear about what you want them to do for you. I shall not list here all the organisations we have used in TVEI for specific and targeted activity. We found that they can provide a great many shortcuts in what would otherwise be a very labour-intensive process of contacting individual firms.

Though we had added to our range of LINKS by half-term we still felt dissatisfied with our progress. Three of our four schools were BP link schools and we were able to submit a joint application to BP Challenge funding during Industry Year. We used some of the funding for secondments to industry. Towards the end of the first term of our second year of operation we decided to bring together a sample group of teachers and industrialists for a short residential course, using this funding to review progress to date, to highlight good practice and identify future areas of co-operation. This was very successful and more teachers and industrialists committed themselves to joint ventures. We were particularly interested in our 16-18 curriculum, since we were in the process of detailed planning and wanted to learn from our (14-16) mistakes.

14-16 successes

- The involvement of industry through Young Enterprise in the development of a SCOTVEC module on Enterprise.
- Using local firms to support the development of realistic problem-solving exercises in Craft and Design.
- The involvement of a number of firms in offering mock interviews and practising realistic form-filing activities associated with the SCOTVEC Life and Work module.
- The help of local community groups in developing and performing plays in Drama.
- The involvement of electronics firms such as Ferranti and Hewlett-Packard in assisting in the development of electronics in schools.
- The involvement of a Hydro hotel and army barracks kitchens in a Home Economics residential project.
- The involvement of the Zoo in a design course in Art.

The 16-18 phase

Here we had a more specific focus. As part of the core for all TVEI students at 16, we decided that we would offer assignments in the form of SCOTVEC modules. As a normal part of learning in every assignment, students would have to come into contact with local industry to achieve the necessary learning outcomes. In order to develop learning approaches for assignments, teachers would therefore have to collaborate with their LINKS contact. Each student will be able to choose from a range of assignments, all of which have a broad vocational orientation and are modules certificated by SCOTVEC. The assignment provides a clear vocational focus within a student's overall broader and more balanced programme. Seven assignments are being developed:

- Office Management
- Design Studies
- Instrumentation

- Information Studies
- Computers in Engineering
- Convenience Foods
- Travel and Tourism

In Office Management, students become trainee managers who are to manage a new travel agency office and, as part of their training programme, have to consider the role of the office, location decisions and acquisition, office design, and so on. In Design Studies the student will investigate and compare two similar retail stores. Using the design process, students must achieve a solution that gives an existing retail store a new image. Specific links with local firms are necessary in both these assignments. These two examples illustrate how our LINKS scheme now has a very clearly-defined series of targets: the range and level of co-operation between education and industry have been excellent. We are now beginning our third year; as yet it is too early to evaluate the assignment strategy.

On from there

We have applied for further support from BP in order to second teachers to specific LINKS contacts so as to devise student assignments. We plan another residential course for teachers and industrial contacts. We shall use this to review activities and encourage further development. As part of our equal opportunities work we want to involve local industrialists in a one-day conference for girls in S2 on Girls in Science and Technology. We recognise that whilst we have successfully linked with local industry at management level, the involvement of trade unions has been very difficult to tackle and has not brought success. We intend to review past efforts and try out new strategies. Finally, we intend to involve industry in the preparation of our TVEI Extension proposals and to prepare a presentation to industrialists and trade union representatives from across the region. We will also be asking them to comment on our draft proposals and to consider the possible secondment of an industrialist to TVEI.

Conclusion

I have described in this short paper the process of developing LINKS which are specifically related to curriculum development. I have concen-

trated on the process because, like most practitioners, I believe that this would be the most relevant and useful area to focus on. Though each TVEI scheme is different, I believe there are clear lessons to be learned from our experience.

These are

- It is important to have a philosophy which is acceptable to the TVEI team as a whole.
- It is important that all TVEI staff should be involved in developing this philosophy.
- Clear targets should be identified and regularly reviewed.
- Teachers need a lot of help and support in making appropriate links with industry.
- Some teachers find this to be a difficult process and may require help, particularly in developing highly-focused educational activities.
- Links with trade unions are very difficult to develop and sustain.

I hope that this article is of use to those readers who are developing or reviewing their industry links strategy.

THE LOTHIAN INDUSTRY LINKS TIMETABLE

September 1985	– Initial consideration of this area as a TVEI base.
October 1985	– TVEI team debates the philosophy of pursuing links with industry.
November 1985	– Industry links newsheet produced and discussed with curriculum groups. Groups asked to develop contacts.
March 1986	– Review of progress. Decisions to organise a LINKS launch. BP challenge submission.
May 1986	– LINKS launch. Teachers twinned with industrialists.
October 1986	– Review of progress. UBI involvement. Secondments to industry.
November 1986	– Residential course with industrialists.
January 1987	– Planning for 16-18 industry links.
April 1987	– Teachers begin developing assignments for 16-18.
June 1987	– Further submission to BP for funding.
August 1987	– Involvement of industrialists in TVEI Extension.
September 1987	– Review of progress.

4 Sunderland's Education through Enterprise Centre: Ready for Extension

Kevyn Smith, Project Co-ordinator and
Sue Townsin, Centre Co-ordinator

The Sunderland Education through Enterprise Centre is housed in a factory unit on an industrial estate in the north west corner of the borough. It provides a base away from school and college where students can experience such activities as enterprise, work simulation and business planning. They are encouraged to take responsibility for their own learning. Centre staff, teachers and adults other than teachers, work as consultants alongside the students, helping them to assess their needs, set attainable targets and reflect on their achievements. We hope they will become more capable, flexible, confident individuals, able to make a success of life in a rapidly changing society.

Each week at the Centre comes as the culmination of a planning programme which involves Centre staff, TVEI support teachers and school or college staff and which begins up to six months before. Each week is different and is tailored to the needs of individual schools and colleges. Recent weeks have been devoted to video production, career planning, the production of electronics and educational toys for young children.

Developing the Centre

Since 1981 the Schools Council Industry project had been working with schools to develop work simulation, enterprise, work experience and other experience-based learning programmes. In 1984 this was developed

through TVEI into a four-week programme of experience-based learning for all TVEI students up to the age of 16: it was extended later into courses for those over that age.

The programme was initially developed by teachers and the TVEI support team (five teachers); many activities took place at the TVEI Resource Centre at Thorney Close School. The success of this work, the need for a more realistic environment and for more space, made the establishment of a separate centre a logical step. A feasibility study was undertaken at Biddick School by industrialists, the Washington Development Corporation and the Education Authority.

Funding was obtained through TVEI and from the EEC Urban Programme. The Development Corporation provided the premises rent free for the first year. The Centre was officially opened in July 1986.

The Urban Programme funding and now that which supports the TVEI Extension phase allows the Centre to provide for all schools in the Authority. Its aims are:

- To respond to the individual needs of young people in a rapidly changing society by offering them an opportunity to experience activities such as business planning or work simulation and to help them to recognise and develop personal skills and qualities through an active learning experience.

- To provide a base for action research into experiential learning and offer support and training for teachers in the design and practice of new teaching skills.

- To provide a resource base for new technology and establish networks of support for schools involved through the Centre with the industrial community.

- To support the integration of new teaching skills across the curriculum in schools and provide an opportunity for strengthening cross-curricular links in institutions.

Planning experience-based learning methods

The EEC and TVEI funding have allowed the Centre to extend its facilities to all the schools and colleges in the Authority. Individual

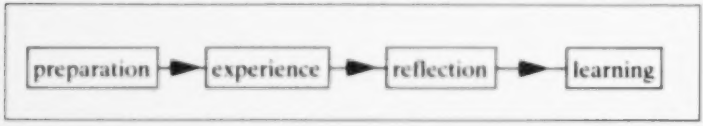
institutions negotiate what they will do in their weeks at the Centre. The model for this negotiation (which has been developed from established processes for bringing about change) has five stages.

1. An initial meeting between the school and the Centre Support team for an exploration of ideas, based on the school's knowledge of its students' needs.

2. The involvement of all interested members of staff and possibly the school's Careers Officer. At this stage the planning team will include all those staff who are to work together at the Centre. The school identifies the underlying aims and objectives, curriculum contexts and specific outcomes for the pupils. Industrialists and other support agencies can then be involved as required and the subsequent roles for the Support Team and school staff agreed. Any needs can also be identified.

3. A programme can then be designed for the week's activities. This may well include preparation and follow-up sessions in school.

4. We use the following model for experience-based learning:



This is the way we structure all the work we do with students at the Centre. Any activities should include some preparation and reflection to reinforce the learning, whether it is the week itself, a particular session with a small group of students, or even a simple phone call by one student. To help staff who are unfamiliar with this style of teaching we use techniques for preparation and debriefing which have been developed by the TVEI Support Team.

5. A review by all those who have been involved in the project.

The Centre is housed in a 3000 sq.ft. factory unit (about the size of a large school hall) in the middle of an industrial estate in Washington New Town. It contains an office and a large production area. Students have access to an electronic office with industrial standard computer hardware and software, with an integrated word-processor, spreadsheet and data

base facility. The office provides an area for small meetings and discussion groups.

The production area is divided roughly into two. In one area the students can set up their own administration and reception areas and can use a video camera and other audio visual equipment. Comfortable seating allows for discussion and meetings. The production area is equipped with a micro-electronic production line and work benches. Basic equipment and tools are provided. There is a small kitchen area with a fridge and microwave oven.

A typical case study

We encourage institutions using the Centre to be as creative and enterprising as possible. The range of programmes is enormous and more diverse examples occur all the while. The following case study is an example of a well-planned and successful work simulation run for five successive weeks by students and staff of the Biddick School. As well as the usual planning sessions, all the staff involved had attended an in-service training session at the Centre in order to familiarise themselves with the building and some of the techniques we were going to use.

The Biddick School simulated work experience

The aim of this programme was to give pupils an insight and understanding of, the roles and relationships within a work unit leading to the roles and relationships within society; to foster personal development and allow pupils the opportunity to solve real problems; experience collective responsibility and enhance the curriculum by providing a real and relevant context for developments in a number of curriculum areas.

They were to use 'Addono Puzzles – The 1987 Enterprise.'

Staff began to prepare for the simulation three months before the exercise was due to take off; pupils had two months to get ready for it.

Managerial posts were advertised in the school's Weekly News and pupils were encouraged to apply by means of an application form and a letter. Support and advice was given by Form Tutors and Humanities staff. Interviews for these posts were held out of school in order to add to the realism and were conducted by industrialists, college lecturers and YTS trainers. Once appointed, managers (pupils) were responsible for

the selection of their workforce. Interviews were arranged and conducted by the managers, with the advice and support of industrialists and careers officers.

At the same time other fourth year pupils were developing ideas for the products, which would be based on the theme of mathematical puzzles. The work would include design, materials research, costing and market research in the school and elsewhere. Much of this work was initiated by members of the Maths department and developed with the assistance of Creative Studies staff.

This preparation was underpinned by work carried on by staff from many departments within the school, with individuals, small groups of pupils or whole classes. The Humanities Department in particular, played a major part in this preparation.

Each of the school's five weeks at the centre followed the same pattern.

Mon	Tue	Wed	Thurs	Fri
Ice breakers Know your Surroundings (inc. health and safety) Simulation game Self-appraisal and Target-setting	Production	Production	Production	Preparation for Presentation
LUNCH				
Setting up Company and training the workforce	Production	Production	Production	Presentation to outsiders
STAFF DE-BRIEFING				

The Monday morning ice breakers were designed to make pupils more confident about working together in a strange environment. Simulation games like Paper Hat or Shortages were used to develop cohesive groups and to examine the need for inter-departmental co-operation. The debriefing session involved pupils in looking at their own and others'

contributions to the group, discussing how, by setting appropriate targets, they might eliminate some of their weaknesses and build upon existing strengths.

On Monday afternoon, after basic ground rules had been established, the workplace was given over to the Company. Adults were on hand to assist in setting up departments and in any training required by the Company; for example, a Bank Manager was available to give financial advice and, once a business plan had been drawn up, to help pupils to negotiate a loan. Some departmental managers had developed their own training programmes and needed little assistance, others needed more; staff needed to be flexible and responsive to specific needs.

Once in production, tutor/consultants were assigned to one or more departments and pupils were taken out of role, individually, in small groups, or (more rarely) as a whole, in order to reflect on progress and re-set or adjust personal and team targets. The nature of these reflection sessions depended a great deal on the personalities of the tutor and the members of the group and the context in which the reflection was taking place.

On Friday morning pupils prepared for the presentations they were to give in the afternoon. Members of the whole Company (usually in departmental groups except where these were too large) were asked to present some aspect of their weeks work to an audience which included teachers, lecturers, careers officers and industrialists. Various aspects of the experience, such as the work of the department, how they had functioned as a group, skills they had learned and so on, were tackled by different groups. They were free to choose their own methods of presentation, which needed to be suitable for video as well as appropriate to the audience; the only condition was that each member of the group made some contribution and had contact with the audience.

While preparing these presentations, pupils were able to reflect on their experience and critically examine what they had learned during the week. Although many pupils were very nervous about giving their presentation, the support of their colleagues helped them to succeed and gain in self confidence.

Video and audio recording equipment was used throughout the week to provide a record that could be taken back and followed up in school.

Each week two members of the school staff were present and there was one from the Enterprise Centre. Staff met together frequently to share thoughts, discuss progress, and plan their own response to situations as they arose. At the end of the week they passed on a record of their conclusions to their successors. These notes included comments on debriefing sessions that had worked well and ideas for modifying activities that had not worked so well.

Reflections

Such an exercise makes great demands on time and effort, both for the staff involved in the 'preparation' and the 'experience' and for those back in school who had to cover lessons. When its value is questioned, comments like these by pupils should be taken into account.

> "It was tiring and needed a lot of co-operation... you needed to mix in a group and talk to people confidently."
>
> "The only thing that I could complain about was that it wasn't long enough."
>
> "I wasn't looking forward to going. I thought it would be a waste of time but I learned a lot about myself."
>
> "I thought the Managing Director would have a cushy job... she didn't."
>
> "I felt as though I was responsible for a real business... it was hard work."

After the end of the last week, an evaluation session was held for all staff involved to determine the direction of next year's experience.

Benefits and constraints

At the time of writing we are about to move into the Extension phase of TVEI in Sunderland. Six more schools will become involved this year and most of them have already worked with us at the Centre. The opportunity to work with teachers new to the experience has given fresh impetus to the solid work done in the pilot phase, as have the extra facilities which will be made available in the Extension Phase.

Planning and mounting a week's activity at the Centre is a daunting task even for those teachers experienced in this way of working. Hindsight about less successful weeks has generally shown that the planning process has been at fault. Problems are inevitable, since staffing shortages have meant that negotiations were sometimes carried out by teachers who were not to be present during the week at the Centre. But we have learnt from our experience and the extension phase submission provides for two new members of staff to be based at the Centre.

The Careers Service in Sunderland has become closely involved with the work of the Centre. We have provided in-service training for them and encouraged individual careers officers to work alongside teachers at the Centre. This allows the officers to become more closely involved in developmental activities with the institution with which they are associated and gives us easy access to a network of industrialists who are willing to give assistance and support. They also provide invaluable help in counselling and reflection sessions.

Adults other than teachers are a valuable resource. They can provide expertise and knowledge from the world outside education and, by acting as consultants, can release teachers, thus allowing them the freedom to work with the students as facilitators rather than instructors.

Impact upon schools

Over the last year 510 students and 50 staff have worked at the Centre. We have provided in-service training for 115 teachers, lecturers and careers officers. This is only a small proportion of the total school population in Sunderland. The success of the Centre is therefore dependent upon its methods and philosophy being translated into the curriculum as a whole.

The pilot TVEI schools have been involved with the work of the Centre since its beginnings in 1984. They are now moving towards a whole-school approach to experienced-based learning. Two have already run weeks of enterprise or work simulation for the whole of their fourth year; a third is in the process of planning a similar event. Another has gone one stage further and is seeking funding for its own Enterprise Centre: they will lose the benefit of working away from the school but gain by its accessibility to all pupils and staff.

All the schools report on the increased self-confidence, initiative and

maturity of those students who have been involved in events at the Centre. Staff recognise and welcome the opportunity for informal staff development during the weeks and have reported the knock-on effects in schools. The supportive atmosphere of the Centre is seen as important for both staff and students to learn from being in an unfamiliar situation.

Teachers also mention the benefits of cross-curricular links, departmental involvement and the stimulus which comes from a change of environment. They see the activity as an extension of the classroom which can be more real and therefore more relevant.

The future

The new staff took up post at the Centre from January 1988. Their presence will mean that we are able to offer wider support to schools. A team based at the Centre will ensure consistency in style and enable the Centre to make a major contribution to INSET in the areas of student-centred learning and guidance and counselling.

To bring all the Borough's schools into the Extension phase of TVEI will make huge demands upon the Centre's resources and time. It is already fully booked for the next academic year; creative solutions, such as double booking, whilst they have obvious benefits in terms of links between institutions, only go a small way towards alleviating the problem. It is imperative therefore that we continue to offer not only a quality experience at the Centre but we must also support schools and colleges in translating the teaching and learning experience into the classroom. Helping teachers to assess and evaluate their effectiveness in a different teaching style will be a focus for our work over the next two or three years.

5 Industrial Tutors – four approaches

Celia Hirst, assistant editor of Insight, has visited TVEI projects in Wiltshire, Essex, Leicestershire and Berkshire, and now reports on the different ways in which that characteristically TVEI innovation, industrial tutoring, is used to support and enhance the work of the schools.

The way in which the now familiar term 'industry links' is interpreted varies widely from region to region and from school to school. Even the apparently specific notion of 'industrial tutors' can mean all things to all people. We explore here four senses in which it is used in four separate TVEI regions.

This diversity stems in part from the deliberately non-directive stance adopted by the TVEI organisation as a whole, but it also reflects differences in the social, economic and industrial climate of the regions concerned, the resources available to them, and the educational system within which each regional TVEI team has to operate.

In Billericay, Essex, there is a single 'Industrialist in Residence' on a year's secondment to the school. At Burleigh Community College, Loughborough, there are six industrial tutors who visit the college and rather than being specifically 'industrial consultants' have adopted the role of 'friendly adults'. In Bracknell, the team of tutors is very much personnel-oriented and is most directly involved in teaching groups of children various life skills aspects of the school's curriculum, whereas Wiltshire TVEI has over one hundred industrial tutors who remain in their workplaces, being visited by students on a one-to-one basis.

The ways in which these industry links have evolved are disparate too. Although all the schools visited had work experience placements operating before the arrival of TVEI, the method of their establishment, and

setting up of an industrial tutor scheme, is different in each institution. Billericay school had no hesitation in involving the parents, to the point of keeping a register of parental occupations from which to draw links with local industry. Wiltshire TVEI were doubtful about possible implications of this approach and preferred to find their industrial tutors via a database already compiled by the local careers office. Burleigh Community College simply sent out invitations to local industrialists to attend a social evening to discuss the idea of industrial tutors. Easthampstead Park School, Bracknell, used a long-standing connection with the local offices of a large multi-national company to draw its tutors from there.

The general use of TVEI resources has also varied from region to region in the pilot scheme. In some areas, it has been seen fit to concentrate on providing central facilities from which the region's TVEI programme can be organised, and which are primarily available only for the use of teachers. Other areas have preferred to spend nearly all their money on creating special TVEI posts within each school, rather than on any central organisational facilities. Such differences are reflected in the way in which links with industry have been developed.

Despite so much diversity, however, there is a common element linking all these projects. They are alike in their aims – to widen the approach to the education of school children, to help them acquire the skills which will be necessary to them in their future lives, and to encourage a closer involvement between the worlds of education and industry. These are, of course, some of the basic aims of TVEI; the fact that differences have evolved in the means adopted to achieve these goals should not give an impression of confusion, but rather convey an exciting picture of the potential of TVEI as it goes into its extension phase. Like a Gestalt, the whole is greater than the sum of its parts. The Gestalt of industry links as they have evolved in different parts of the pilot scheme offers a glimpse of what it will be possible to achieve in the future as they continue to develop.

Wiltshire's industrial tutor scheme is student-centred

Alan Wheatley, project co-ordinator for the Wiltshire TVEI pilot, gives a very high priority to developing links between education, industry, and the community in general. For him, the principles of the TVEI approach have not changed his attitude towards the teaching process; they have simply given him the freedom to interpret things in a way which he has always believed is right. The importance of involving industry with

schools, and vice versa, was stressed long before TVEI came on the scene and, since 1978, when the Authority was chosen as one of the original trial areas for the Schools Council Industry project, Wiltshire has had an Industry Education Liaison (INDEL) Co-ordinator called Paul Quantick. So all the TVEI institutions in the Wiltshire area were running work experience programmes prior to TVEI and had many other links with employers.

With the advent of TVEI came the chance to incorporate additional links and to develop more varied and innovative ways of involving local industry. Perhaps the most important of these was the industrial tutor scheme.

The scheme was first piloted by Alan Wheatley and his team in the summer term of 1986 and, after an initial evaluation, they decided to extend it to all 4th, 5th and 6th year students in the TVEI consortium schools (George Ward, Hardenhuish and Sheldon). It is now being offered to students at Chippenham Technical College as well.

In order to develop a comprehensive network of industrial tutors from the start, TVEI careers officer Jenny Clayton used resources which were already available to her in the shape of a computerised database at Chippenham Careers Office which covered the majority of organisations in NW Wiltshire. Using contacts already established, or after making new ones, she visited the employers, taking with her a leaflet which explained the scheme.

She found that, virtually without exception, everybody she visited was supportive and they now have 33 employers and approximately 100 volunteer tutors on their books. All are local but they represent a balance of large and small companies and a wide cross-section of different types of organisations, occupations and activities. Among these are the Avon Rubber Company, GEC, and the Westinghouse Brake and Signal Company.

Having established this network of participating organisations, the information gathered on industrial tutors was filed for use by the INDEL teachers and students in the three schools, who together decided which industrial tutor it would be appropriate for each individual student to visit. They might need to gather information for a project, consult about technical matters, or seek some form of careers guidance.

Students themselves were responsible for approaching the industrialists, for getting permission to be out of school, for making travel arrangements and for determining precisely what information they wished to obtain; all of this required a certain amount of initiative on the student's part. It was also left up to them to decide how many visits they wished to make. Some visited just once, but others developed more of a one-to-one relationship with their tutors and visited them every week. The fact that each of the consortium schools had common timetabling for three mornings of the week made it easier for students to arrange half-day visits.

Although students were encouraged to be autonomous in their use of the scheme, they generally had a briefing session to sort out any problems they might have and clarify their reasons for going, as well as a de-briefing session when they returned to share their experiences with other students in or outside the classroom or with a member of the teaching or careers staff.

According to an evaluation made after the pilot scheme, nearly all the students felt they had gained from their experiences. Their reaction was generally very positive, although some realised that they hadn't done sufficient preparation prior to their visits; one or two even admitted that they forgot why they were there!

For the tutors too, the experience has been a valuable one. Although many of them started off with the expectation that the framework of the pupils' visits would be career-oriented, some have grasped the greater curricular possibilities of the scheme and its longer-term benefits to industry. Alan Wheatley is pleased to note that some employers are now beginning to use the language of the educationalists, and talk about such things as motivations. At least one of his aims, that of influencing community attitudes, appears to have been successful.

There have been many other benefits too. One of the beauties of the industrial tutor scheme, he says, is that the schools can reach the places that other schemes can't reach. It is often difficult, for instance, to arrange work experience with smaller firms, but the contacts now established may help with the development of future work-shadowing projects. It has also provided an opportunity to emphasise the equal opportunities aspects of the TVEI scheme – although work experience placements all too often still reflect a traditional gender bias in students' choice of placement in spite of considerable efforts to counter it. Moves have now been instigated to identify more women in the community who have

succeeded in management and other industrial roles so that in future they will have greater representation in the industrial tutor scheme.

Wiltshire's approach to TVEI has always been to spend their resources on people, rather than on centres for operation, and this is quite clearly reflected in their approach to industry links. To quote Alan Wheatley, "Putting it in a nutshell, if you place the students at the centre of things, it does actually work and you can raise standards." It is the students who have been the central concern of Wiltshire's industrial tutor scheme, and it is the students who have probably derived the greatest educational benefit from it, but the community at large will surely benefit ultimately from it too.

Ford manager 'in residence' in Billericay School, Essex

A school which, in past years, has had Adrian Mitchell as Poet in Residence, found it only natural that, with industry links coming to the fore through TVEI and the idea of industrial tutors being widely floated, it should wish to create an opening for an 'Industrialist in Residence'. This unique post was created by Essex County Council in Billericay School in September 1986. It was filled by David Bones, a Manager of Body Engineering in Ford's Product Development Group.

The appointment had been preceded by an appeal for help made by the headmaster, Arthur Lingard, at a meeting of the British Institute of Managers. "Industry should stop complaining that we are not providing suitable education and come into the schools and help." His plea fell on sympathetic ears at Fords, for they responded not only by seconding David Bones to the school but by paying all his expenses as well.

David Bones had joined the Ford Motor Company in 1942 as a trainee draughtsman, and had progressed through car body design and engineering management before his appointment as Industrialist in Residence, so he had little experience of the world of teaching and had no certain knowledge about what might be expected of him.

* Wiltshire TVEI have now produced an extremely comprehensive and informative operating manual for the industrial tutor scheme, relating their experiences of setting up such a scheme and giving guidance for others who wish to do so. Anyone wishing to obtain a copy can contact: Alan Wheatley, TVEI, Sheldon School, Hardenhuish Lane, Chippenham SN14 6JH.

The appointment was only intended to be for a short period, but not only was it extended up to a whole school year, but also to five other schools as well. In the second half of his secondment Mr Bones made frequent visits to Ongar, Witham, Colchester (Philip Morant), Barnstable and West Hatch (Woodford) schools.

At first he was given an open-ended timetable, and, working closely with the staff, began to help out with various aspects of the TVEI curriculum. However, as Hayden Garrood, the TVEI co-ordinator at Billericay School, was keen to point out, David Bones was not there as his assistant, but for the direct benefit of the youngsters.

As the first term progressed the resident industrialist helped students with their technology project work. This evolved into his producing a technology project plan which the students could use to chart their progress through their projects by following a logical sequence. It also contained hints on timing and organisation; both students and teachers found it useful as a record of progress. It is now being used by students in the other schools which David visited.

Although he had previously had no experience of teaching, as a manager David had been involved in staff assessment. This knowledge was to prove useful both in helping the students with their interview techniques and in developing profiling records with the staff. His industrial assessment techniques were of considerable interest to Hayden Garrood, who felt they could be adapted and applied to teacher assessment as well.

The other main area in which he was involved was that of setting up mini-companies for CPVE. One of these resulted in the pupils starting a small manufacturing firm, producing table decorations and Christmas cards and selling the products not only to their fellow pupils, but to local shops as well. This sort of enterprise is nothing new to Billericay school, however, since they have a farm on the school premises which is run as a business and makes a profit: last year its turnover was £6,000, with only £1,500 input from the school.

As a school, Billericay has always prided itself on its technology education record, and was awarded the Schools Technology Award in 1984. With David Bones at the school, pupils walked off with three of the trophies at the Basildon Industrial Group technology competition in May 1987. Sharon Wooldridge, one of David's pupils, won the main trophy

for her design of a violin stand. Mr Lingard, the headmaster, understandably labelled the competition "a resounding success."

The appointment of an Industrialist in Residence is not the only form of industry link operating in the school. Their Head of Physics has been seconded to BP for a year. Last year 63 pupils were doing work-shadowing and a further 60 were having work experience. Mr Garnood feels that the latter is useful in involving parents more closely with the school, since many of the work experience contacts have been made through them and the school now keeps a record of parents' occupations for future reference. There is also parental representation on the school's TVEI committee.

As a result of the school's efforts to provide every aspect of work opportunity for every kind of youngster, Mr Lingard is also proud to claim that not a single one of the 300 pupils who left last year had no form of job to go to. It is not so much a question of getting jobs, but of which ones they choose. (It must of course be borne in mind that Billericay is situated in an affluent and developing eastern industrial area.)

As TVEI goes into its extension phase Billericay school hopes to continue developing its industry links. Although David Bones has now left to work for a local Enterprise Agency, both staff and students are keen to continue with an Industrialist in Residence. As one of the students said after a technology lesson – "It brought the subject alive because he was somebody real."

Burleigh Community College, Loughborough, takes in tutors as friends

When Burleigh Community College, Loughborough, started to develop its industrial tutor scheme in 1985, Joyce Ellis, the then TVEI co-ordinator for the school, sought help from Queensbridge school in Birmingham where Peter Hewitt, the co-ordinator, had already been running such a scheme for a year. Although Burleigh students were familiar with work experience even before their TVEI project started in September 1983, the idea of industrial tutors was a new development and Peter Hewitt's support and assistance were very important in the formative stages, especially when it became clear that local industrialists were somewhat apprehensive about the scheme.

Joyce Ellis decided to introduce the idea to representatives from local industry as part of Burleigh's involvement with Industry Year and she invited them to a meeting at the college in April 1986 to discuss the

proposal. She had already drawn up a suggested 'job description' for industrial tutors, and this was circulated with the invitation as a guideline for discussion.

1. To devote about one hour per month in maintaining a regular interest in the progress of a small number of students, probably no more than six.

2. To present an industrial perspective and detailed information to give students a stronger awareness of the world of commerce and industry.

3. To provide opportunity for students to discuss their progress, aspirations and problems with someone from beyond the world of education and to guide and counsel students to a stronger and more substantial awareness of the relevance of their work in school to the nature of work in industry and commerce.

4. To help students with any specific projects or practical assignments which can be readily supported by access to industrial resources (limits to the resource of goodwill are recognised).

5. To work with a senior member of the teaching staff to ensure a 'partnership of responsibility for the young people involved'.

This definition was accepted at the meeting and six volunteers came forward; they included two local hairdressers, the Branch Manager for WH Smiths, a graduate trainee from Brush Electrical Machines (one of the largest employers in the town), the editor of the local free paper and a personnel manager from the Severn Trent Water Authority.

Purely coincidentally, three of these were female and three male, but this balance of the sexes was not reflected in the 36 pupils who chose to join the scheme out of 130 fourth formers to whom it was offered; there were unexpectedly more girls than boys.

Each pupil who chose to participate was given an 'application form' on which they had to give a brief description of themselves, list what subjects they were taking, describe their hobbies and interests and state why they would like to join the scheme. These were then given to the tutors to whom they had been allocated and each tutor in turn was asked to complete his/her own 'CV' for the students to read.

The first meeting between pupils and tutors took place in October 1986, in an informal gathering which included ice-breaking sessions to help them to get to know one another. From then on, it was up to them, although certain guidelines for meetings were drawn up for reasons of expediency. Most of the meetings took place in the Community Lounge in the college, with the students acting as hosts; all were within school time, although spread over different days each month to avoid pupils missing the same lesson too many times. All the tutors were given a conducted tour of the school by their students and, at least once in the year, each group visited their tutor's place of work, though visits were by no means restricted to this. Students visited a magistrate's court, a technical college and a printing works.

The topics for discussion were not limited to the world of work. Given the meetings' open format, pupils found themselves involved in a wide range of activities, ranging from serious talking about social issues such as AIDS to playing snooker.

What do the pupils think they have gained out of the last year? Sarah Jane Hockley, whose tutor was Mr Crawford, the editor of the free paper, said it really opened her eyes to the world of work. Richard Sutcliffe appreciated the freedom to cover 'just about everything' in discussion topics. Mary Biddles, who was privileged to be taken on a guided tour of the local sewerage works, wanted to know how people could possibly work there. Sarah Roughton found her talks with the manager of WH Smiths brought more reality to her Business Studies course.

In fact, nearly all the students felt that they had benefited from the scheme in one way or another, either by gaining confidence, by learning more about the 'outside world', or even just through meeting somebody of a different age group with whom they could form a communicating relationship.

When asked how they would improve the scheme, the majority of students suggested more frequent and longer meetings, with more visits to work places. As the year progressed, some students asked for an industrial tutor from the care services, and a voluntary worker who cares for the elderly has now stepped forward to be included in the scheme.

Joyce Ellis' notion of an industrial tutor as "a friendly adult who is not a teacher or a parent," and her keenness that the scheme should not simply be seen as another form of careers guidance, have been accepted

by most of the pupils. The tutors themselves say that they have enjoyed finding out what modern education is about, and appreciate the relationships that are building up. This is not to say that there have not been difficulties, but most of these have been of an administrative nature.

The students are now continuing with their tutors into the fifth year, and Joyce Ellis and her assistant, Barbara Simpson, are busy looking out for more potential tutors for their fourth form pupils. With Keith Foreman, a longstanding advocate of industry links, as the principal of the College, they look forward to even greater involvement with local industry. An Industry Liaison Group has been set up; work experience is being broadened and work shadowing, introduced as a pilot scheme, is now being offered to all 6th year students. Two teachers from Burleigh are going on special secondments to industry, and a 'special link' is being set up with the firm of Davy Morris, which manufactures cranes, lifting gear and other heavy industrial equipment.

None of these links happened overnight, and as Joyce Ellis knows only too well the industrial tutor scheme has been particularly time-consuming to set up. But to put it in her own words –

"We shouldn't underestimate the time and effort necessary to establish sound industry/education links but the benefits, most of all to our students, far outweigh the problems."

Easthampstead Park School, Bracknell, links with ICI and Germany

One might expect a school which lies in the silicon valley area of Berkshire to have plenty of opportunity to develop links with modern industry and technology. Easthampstead Park School, Bracknell, has certainly taken advantage of its position. Long before TVEI came on the scene, work experience was a familiar part of many pupils' timetables. As the present TVEI field officer for the Berkshire project, Martin Gocke, says, it is difficult to assess what has been brought about by TVEI and what would have happened anyway.

Easthampstead Park School is part of a consortium of three schools liaising with the local college, the others being Brackenhale and Garth Hill. With the advent of TVEI, each of these schools has developed strong links with a major international company which has a division in the area. In the case of Easthampstead Park, this has been with the Protection Plant Division of ICI, a connection first fostered both through the

Teachers into Industry scheme and the fact that the plant's training officer, Nic Laycock, is a governor of the school.

In its original submission to TVEI, Berkshire had included a proposal for using industrial tutors and gave an outline job description which ran as follows:

"The tutor would be expected to be an 'expert', bringing a wider knowledge of the concept of work (not just industry). The tutor would act as an informed consultant on such topics as

- What is work?
- The Life Skills Programme
- The community of the workplace.

The tutor would be expected to build up a caring relationship with pupils, taking an interest in and supporting all aspects of the pupils' work... Each tutor would work in conjunction with the school-based Tutor responsible for a group of 15-18 pupils; there would need to be seven industrial tutors per year group. Over the year we foresee the Tutor's commitment being equivalent to approximately one hour per week.

Because of the substantial link already forged between ICI and the school, Martin Gocke naturally approached them to ask if they were willing to become involved. The company agreed and a team of three industrial tutors was appointed. However, it soon became apparent that the original working definition of industrial tutors was not practical for several reasons.

- The distance of the plant from the school meant that it was not particularly cost effective to bring the tutors for an hour session.
- It would mean increased interruptions during lessons for TVEI pupils.
- It did not make the greatest use of the particular expertise of the tutors.

This final factor was particularly significant in moving towards a change of role definitions, since all three of the volunteers shared a particular expertise in ICI's staff training programme. David Knee was their YTS co-ordinator, and Libby Drew and Jenny Hemingway were both staff trainers. Martin Gocke and his team therefore decided to renegotiate with ICI in order to tap these resources to their fullest extent. More

emphasis was placed on the tutors contributing to the 'Living in the Community' course, using their personnel skills to develop and co-ordinate relevant aspects of the programme. The activities which they introduced, and the preparation and follow-up work which accompanied them now form part of the syllabus for the course.

In addition, a half-day visit to the ICI plant was organised. This initially had to be cancelled because the Prince of Wales got there first, but it eventually took place, with the whole group touring the Jealotts Hill site and learning about the role of a research establishment within such a large company as ICI. This was followed by several other visits by different groups of students. They didn't just tour the plant but did practical group work sessions, and carried out problem-solving and work simulation exercises.

Staff too have benefitted from the presence of the three ICI personnel, not only by having them act as tutors to those staff involved in revising the 'Living in the Community' course, but by being able to use their expertise to learn about such things as running meetings and being helped to develop effective speaking skills.

The industrial tutor scheme, however, is not the only form of link between ICI and the school. Recently, Easthampstead Park has been seeking to enhance its 'A' level curriculum and Steve Fitzjohn, a recent graduate now working with ICI, has come in to advise and assist 'A' level chemistry students in the school. Work experience placements are still continuing, and ICI have been extremely generous in this respect: in fact, they offered too many work placements for the pupils to take up last year.

But perhaps the most exciting development on the industry links front is yet to take place. Once again, with the support and assistance of the ICI research plant, a group of Easthampstead Park students is to visit Germany to learn about industry there. The scheme is code-named 'Operation Munich' and is the culmination of a whole course designed to provide over 20 sixth form pupils with work experience of a different kind. Easthampstead Park was invited by the MSC to develop the project, which it is hoped will act as a pilot for future ventures, and it is being funded by the EEC.

When in Germany, the pupils will spend two weeks working alongside young German employees in such diverse companies as BMW, Deutsche

Bank, and Kaufhof, one of Germany's largest retail stores. Two scientists from ICI will accompany the group to act as personal and industrial tutors.

The course which precedes the visit is designed to equip them with some of the skills they will require. Very few of the students have been to Munich, or even to West Germany, and know little about the country and its economy. Neither do many of them speak German so, together with Geoff Cranville, the present TVEI co-ordinator from the school who will accompany them, they are undergoing crash courses in the language.

The project was conceived and planned by Michael Hawe, the Principal of the school, who will act as leader of the expedition. He believes that "individuals who learn by *experience* to develop personal skills in close knit groups, go on using these skills throughout the rest of their lives. Operation Munich is, therefore, a perfect training in character and leadership to accompany the high level of academic work necessary to pass 'A' levels and to go up to university."

If the scheme is successful, it is hoped to return the visit by bringing twenty German students here for Operation Bracknell. We must all wish them "viel Gluck!"

6 Mini-Company Developments in Somerset

Steven Craggs, Community Education Officer

A major criticism levelled at schools by industry is that students entering the world of work, regardless of ability or willingness, have little idea about how companies work or the kind of problems they face. Young people must be 're-trained' before they can make a useful contribution to industry. In the past this had been accepted by employers as a fact of life but with increasingly unemployment and mounting financial pressures on industry this retraining wastes both time and resources. Schools are expected to ensure that students have been helped to understand the world of work.

Seven years ago the then Head of sixth form at the King Alfred School offered the Young Enterprise Scheme to the lower sixth students as a way of extending the opportunities available to them. Participation in the scheme was purely voluntary and students committed some of their own free time to the project. Once the group was established it appointed a member of the Burnham-on-Sea Rotary Club as adviser. The school had little contact with the company activities other than providing premises and, when necessary, production facilities.

With the introduction of TVEI to the school, the Young Enterprise format was considered as a way of providing a vocational element to the curriculum. It was felt that, with development of modules along vocational lines, students would have a much greater awareness of the role of individual school subjects in relation to the world of work, though it would be unlikely to increase their understanding of the mechanics of a company and of the day-to-day factors influencing the success or failure of a business. Only a small proportion, mainly those involved in business

studies courses, would begin to understand such things and this understanding was likely to be largely theoretical.

We considered mini-companies might be a practical method of developing the business concept within schools through direct, practical experience, by running a company on the lines of a 'real' business and coping with the problems that would arise.

Getting Started

A teacher with a special interest in mini-company operations was made responsible for investigating potential developments. This member of staff had worked in industry in a middle management capacity before entering teaching. He was given no timetable allocation and in the initial stages there was no budget.

The existing Young Enterprise company was observed closely during the autumn term of 1985, and the system was compared with other packages like the Shell Mini-company Kit and, later, the National Westminster Mini-Enterprise Scheme.

The Young Enterprise Scheme offers a highly prescribed and structured format and the incentive of a regional competition. From its outset, the students, all volunteers, were offered the opportunity of forming a company and the first few meetings were spent deciding on what it would manufacture. Several suggestions were made and market research was carried out to select the most promising.

The adviser from the Burnham-on-Sea Rotary Club played an important part in the early stages by helping to formalise the company meetings, which were chaotic at first. Very little advice was asked or offered in regard to product and market research, although once the Scheme was under way the adviser provided valuable information about local contacts, suppliers and potential customers. By Christmas 1985 the role of the adviser had reverted to one of observer, the company having acquired enough confidence to make independent decision and tackle problems by themselves.

Eighteen students formed the original company and divided the positions amongst themselves – managing director, secretary, financial director, production director, sales director, personnel director – according to the skills they believed they possessed. Several of the posts were shared

between a number of students; for example, a team of three took on the financial side, although one was delegated as spokesperson to speak at company meetings. By Christmas 1985 only two of the original 18 had left, one voluntarily, the other having been 'fired' by the directors for not having fulfilled his commitment.

Students originally agreed to meet once per week for approximately an hour and a half but by Christmas the norm was three to four hours as members tried to meet customer orders. Based upon this experience, the potential of mini-companies in TVEI was set out as a series of aims, and several mini-companies were subsequently formed throughout the upper school (4th, 5th and 6th forms) under differing regimes but using the same basic structure.

Aims and motivation

The following aims were specified for those who wished to set up the mini-companies.

Students will develop an understanding of business methods through direct experience

The companies should be 'real' companies with boards of directors, finance, sales/marketing, personnel and so on, and they would be required to hold regular meetings and keep appropriate records. Variations would depend largely upon needs of the client group.

The companies should be the property of the participants, with adults acting only as advisers with diminishing influence as the company develops. By the end of the exercise, when the company is wound up, the students will have a good understanding of the structure of a company and the necessity for, and the inter-dependence of, individual departments.

Students will gain experience in handling and controlling finances

It was recognised that many students, and indeed many adults, have little concept of financial control. The skills of planning expenditure and budgeting are extremely valuable at a personal level as well as vital for a business. Students involved with mini-companies will, possibly for the first time, be responsible for relatively large sums. It is in this area that the adviser may have to be a major influence on the early life of the company.

Students will develop a responsible approach to keeping records

In addition to keeping financial records, students will quickly appreciate the need for records (minutes) of company meetings, especially of decisions made and actions to be taken.

Students will develop the kind of broad-based skills required by industry through an integrated (non-subject based) activity

Mini-companies are truly cross-curricular in nature, which itself may present problems. It is an extremely important aspect of mini-companies that students appreciate that work, outside school, is not pigeon-holed into neat, one-lesson boxes.

Students will have the opportunity to make decisions about a real situation and deal with the real consequences of these decisions

The school curriculum has endeavoured to provide opportunities for students to take part in decision-making and problem-solving. In practice, such opportunities are often restricted and at best are individual situations under tight control of teachers. Most students regard even the best simulations as 'not real' and when ill-conceived decisions are made "it doesn't really matter."

It is crucial to the mini-company philosophy that adult involvement be minimal or, where appropriate, non-existent. Students must be in a position where they can make their own decisions. Such decisions will be real and will have real effects.

Students will develop responsibility to themselves, the group with which they work, and to others

Co-operation is essential within a mini-company. The tasks are too complex for an individual to take on all the work. Peer pressure helps to bring about a reasonable distribution of work amongst its members. Students quickly realise that, having taken on a task, it is their responsibility to complete it and that the whole group will suffer if it is not done properly. Company members will also have responsibilities to others outside the organisation: to creditors, customers, shareholders and so on.

Students will develop social skills

The participants should learn the etiquette of committee meetings, allow others to have a fair say and listen to what is said. This has knock-on effects elsewhere. Experience has shown that even young students are prepared to put aside personal antagonisms in order to get the job done.

Students will gain confidence in dealing with adults other than teachers

Many students leave school with little experience of dealing with adults other than family and teachers, with whom a special relationship usually exists. Most mini-companies will require dealings with other adults, through placing orders, undertaking market research, making sales or simply acquiring information. Among the benefits gained by students are techniques useful in handling interviews for jobs or places in higher education. Students with mini-company experience tend not to be overawed by these occasions.

The Structure

A structure was devised to fit mini-companies into the organisation of the school.

A Range of Mini-companies Established at the King Alfred School

Company Name	Age Group in group	Initial number	Time Commit-ment	Format	Source of idea
KAS TRADING CO	5th year	8	lunchtime	Young Enterprise	teacher
SILVER DISCO	5th year	8	lunchtime	No format	student
SILVER BLADES	4th year	11	lunchtime	No format	student
PARTY POPPER	4th year	18	timetable	Shell Minico	teacher
KASTEX	4th year	16	Timetable/ freetime	No format	student
JOYRIDE	5th year	9	lunchtime	No format	teacher
COFFEE BAR	6th form	9	freetime	No format	student

Management Structure for Mini-companies at King Alfred's

KASMINCO ENTERPRISES	A Holding Company for all mini-cos. It maintains banking facilities and is made up of the Mini-company co-ordinator, advisers from mini-companies and student representatives of the mini-companies.
Registered Companies eg Silver Blades	Once trading, mini-cos will be expected to register with the holding company in order to use banking facilities and receive immunity from liabilities.
Managing Agent Adviser Managing Director Financial Director	The adviser will be a member of staff with an interest in mini-companies and/or an interest in the product being offered by the company. If possible advisers from outside of the school should also be arranged.
Secretary Production Director Art Director	The companies will be offered mainly to 4th and 5th form students within the TVEI framework but the system should be available to all students and to all companies regardless of size.
Sales Director Personnel Director Employees	It is expected that a number of students will share individual posts and where appropriate, rotate through other posts to widen experience.

Seven companies were established during the Spring Term 1986.

Teaching staff, acting as advisers to the companies, steered them towards this structure, but a flexible approach was maintained and the concept of a formal structure was introduced at a different stage, it depended upon the way the group developed.

No group was timetabled for mini-companies although it was possible, with some of them, to incorporate company meetings into specific lessons. The staff acting as advisers did so voluntarily and had varying roles depending upon which company they advised.

Company Case Studies

Company – 'Party Poppers'
Students – 4th Year Pre-vocational Group
Numbers – 18
Format – based on Shell Minico Kit
Time – Initially as part of ISE (Industrial, Social and Environmental) lessons of City and Guilds Community Care Foundation Course.

The Company was initiated by the teacher of the Community Care group, who wanted an activity which would integrate the vocational element of the course with the economic and social aspects of the ISE course. He allocated ten lessons – (five double periods approximately six hours) – to what was initially conceived as a simulation. In order to speed things up the teacher suggested three ideas for a project, without introducing the idea of a company. The students spent the first session talking through the tasks with assistance from the adviser and at the end voted on the project to be pursued – a party for the reception class of a local primary school.

At the next meeting the broad tasks were identified with the adviser acting as prompter, and the jobs were allocated by the students themselves. The adviser played no part in deciding who did which jobs. A short formal teaching session was introduced by the adviser, who outlined company structure and the roles of directors. Task-oriented groups were then designated to take on formal roles in the company. All the company roles

were taken on by small groups rather than individuals. Tasks identified were –

Managing Director – Who would co-ordinate the group and act as 'front' for company.

Secretary – To record decisions made at meetings, write letters to parents and others, produce invitations and so on.

Financial Director – Whose job was to keep records of income and expenditure, to cost out various aspects of production, co-ordinate the raising of capital and arrive at a price for tickets.

Production – To co-ordinate production of the party, provide food, organise games, make decorations and place orders through the financial director.

Sales/Marketing – This group would publicise the party by contacting staff of the school and the primary school and parents of primary school students; they would research what should be offered at the party in terms of food, games and music.

Art Director – To research and/or produce original designs for such things as decorations, party hats and table decorations; to design posters and work with the Secretary on ticket design.

Personnel – Would ensure that participants meet their commitments to the company on time.

Once the suggestion for 'Party Poppers' had been accepted it clearly was no longer a simulation and participants threw themselves into the company with gusto. At the end of the second session they had completed the documentation and registered with the holding company. Capital was arranged by the students approaching the PTA for a loan at a nominal interest rate; this was deposited in the bank account in the name of the holding company.

Although the participants had individual responsibilities, all students took part in certain aspects of the work; for example, they all contributed towards the production of food. Much of the work was done in the evenings and lunchtimes, outside the time allocated by the teacher. On the day of the party students requested to be released from other lessons in order to make final preparations. The teachers involved were approached individually and most agreed.

The party was a great success and two more were organised by the team during 1986. No timetabled time was allocated to the subsequent events.

The teacher/adviser made more input to the company than the adviser for the Young Enterprise company. He found it difficult to stand back from the company and "let them get on with it." Formal teaching sessions were involved and students asked for a lot of advice as the company got under way. The enthusiasm of the group meant that the adviser was approached during most break and lunchtimes. As time went on the adviser took a lower profile and was less forthcoming with help. Initially the company regarded this as a lack of interest and got on with the job themselves. At this stage the adviser had to do a lot behind the scenes as the company made mistakes and he tried to correct them.

Company – Silver Blades
Students – 4th year mixed group
Number – 11
Format – nothing specific
Time – lunchtimes

The initial motivation for the company came from the students themselves. Four students approached their Head of Year and asked him if he would organise an ice skating trip to Bristol. The Head of Year refused but said he would help them organise it for themselves. Until this time these trips had been 'special events', occurring infrequently. The Head of Year saw the exercise from the outset as a potential mini-company but did not take this line with the students.

Informal meetings were held at lunchtime to break the task down into its components – publicity, transport, bookings – with the Head of Year acting merely as an observer. A date was set, coaches booked and the event went ahead.

The event, as privately predicted by the Head of Year, was a disaster: it was poorly attended and a loss was made. In the subsequent meeting the Head of Year took the chair and the exercise was reviewed. Without prompting, the students analysed many of the things that had gone wrong – poor publicity, lack of communication within the group and with those outside, absence of accounting, and so on. The teacher discussed with

the group some elements of a company structure which might help to get round some of the problems they had encountered; others were introduced later as the need arose.

The loss on the first trip was covered by the Holding Company but a deficit was recorded in the newly formed company accounts. A second trip was very successful and covered the loss made on the previous event. Silver Blades registered with the Holding Company at this stage. The Head of Year, who initially regarded the venture as a 'one off', now found himself acting as adviser to an on-going company. During the year the company ran 22 ice skating trips for students of the school, by the end of which the adviser had only a watching brief. The students regarded the company as their own and were meticulous in their approach towards it, having learnt from their initial disaster.

Company – King Alfred's Trading Company
Students – 5th form various
Number – 8
Format – based on Young Enterprise Kit
Time – lunchtimes

The company was initiated by the Mini-company co-ordinator, who approached a number of friendship groups who appeared to have nothing to do at lunchtimes. It was suggested that they might spend one lunchtime a week running their own company and one group decided to give it a go.

The adviser used the Young Enterprise Kit as a basis for the company and introduced it at the first meeting. The students found the material rather daunting and after this initial discussion the material was put aside until the next meeting. Possible companies were discussed; some were not very practical and participants were asked to return the following week with firmer suggestions. The next meeting was spent trying to decide on a company and by the end of it the adviser suggested a trading company and this was agreed.

But the company never got off the ground. Six meetings were held, only the first two were attended by all the members. The students regarded the company "more boring than we expected." Comments ranged from "We couldn't see that we could get the company to work" to "It's just school work and it's our lunchtime."

The company was not large enough to allow for absenteeism and being a 'friendship' group it was less easy for them to put themselves into individual roles within the company. At no point did the students feel that the company was their own: the adviser appeared to direct every move. The enthusiasm which existed with other companies never showed itself with this one.

Company – Coffee Bar
Students – 6th form various
Number – 8
Format – unspecific
Time – break/lunch/free time

A small kitchen was opened where the sixth form students could make coffee and light snacks. Individual students brought in their own coffee, cups, milk etc. Inevitably, the area became crowded, messy and impractical at busy times. A group of students approached the Head of Sixth Form to do something about it. The teacher suggested that they do something about it themselves and that a company could be formed to raise funds for the Sixth Form Committee.

The students were highly motivated and formed their own company structure after holding discussions with the Young Enterprise Company. Students were teaching students. The Head of Sixth Form acted as adviser but was never required to make anything other than minor suggestions. The company met briefly with their adviser once every fortnight to report on developments.

Although the Company never registered with the holding company its structure broadly followed its guidelines. Initial funding for the company came from the Sixth Form Committee and transactions took place through their building society account.

Company – Kastex
Students – 4th year art group
Number – 16
Format – based on Shell Minico Kit
Time – some timetabled, mainly after school

TVEI Developments

A group of students, having completed a TVEI textile design module which included screen printing, asked their teacher if they could continue with the work in their spare time. The Head of Dance asked if these students would design and print tee-shirts for his dance group. The company was formed, with the art teacher acting as technical adviser and another teacher as business adviser.

The students themselves realised that to be successful some structure was required and the system was introduced to them at an early stage. Initially 20 students joined the company, sharing all the necessary roles. Sample tee-shirts were produced: these were used to promote the sale of shares in their company. The company attended local fairs to demonstrate screen printing, sell shirts, and do market research.

The company received an order for 200 shirts from the Football Association (Somerset and Avon) and obtained a loan from the holding company in order to buy materials to meet the order. Kastex opened its own bank account and used bank staff for financial advice.

The company began to have production difficulties when some members failed to meet their commitments. Without reference to advisers, a company meeting was held at which four members were 'fired'. The remaining members were organised into four production teams, each producing material during one evening a week.

The company quickly became self-sufficient, regarding advisers almost as employees rather than overseers.

Gaining credibility

Whilst mini-companies had existed within the school before the advent of TVEI they were regarded as peripheral by most, and 'fun and games' by some. TVEI has given credibility to the exercise in both its vocational and cross-curricular nature. In the early stages some staff were unwilling to allow students to miss a single lesson to participate in mini-company business – in an extreme case a pre-vocational group was not allowed to spend thirty minutes of a maths lesson to complete the company accounts. This situation has not arisen since staff have, as part of TVEI, rewritten courses on modular and vocational lines. Care must still be taken, however, to ensure that mini-companies do not take over!

Pros and Cons

At the King Alfred School mini-companies still cannot be regarded as part of the main stream curriculum and it is arguable whether they should ever be. Students must have a sense of ownership of the companies if the aims are to be achieved; timetabling mini-companies might work against this. Once enthusiasm has been generated, the commitment of free time has proved no barrier to the running of companies, provided they are seen to belong to the students themselves.

Many of the companies established in the early stages were essentially service industries. While these omit major elements in mini-companies, the buying of raw material, quality control, production methods, and so on, the essential aims are still met. Service industries are unlikely to present major cash flow problems in the earlier stages and they allow students to reach the 'trading' stage more quickly: This helps to maintain enthusiasm. As the confidence of co-ordinating staff grows, and funds accrue, manufacturing industries like Kastex can be more readily considered.

We have been conscious of a problem in calling upon staff to use their spare time as advisers during a period of uncertainty in the profession. However, some heads may regard involvement in mini-companies as a valid use of 'directed time' in the future.

Although the main impetus for mini-company development has been in the 4th and 5th forms, with a spilling over into the sixth form, it is clear that the success of the companies is beginning to influence other years. It is likely that three companies will run under the Young Enterprise Scheme in the 1987/88 academic year; only one of these has had previous experience. In addition, groups in the lower years have used the mini-company format for one-off events – a second year touring circus group for local play schemes; a first year disco organised by students; a third year outing to Alton Towers with a turnover of seven hundred pounds. Such groups require advice and supervision which has been provided initially by tutors as a group exercise during Personal and Social Development time.

Effects on students and staff

The mini-company experience has had effects on all participants, both students and staff. Student confidence grows, most particularly when

dealing with adults. They are more prepared to take on complex tasks now they know that, by analysing and breaking them up, such tasks can be satisfactorily completed. Group work in class benefits from the experience they have gained. There is a greater willingness to co-operate and take part in group activities. Teachers have also learned from the experience. All teacher/advisers have shown a tendency to direct too much in the early stages of a company. As the company grows, however, they have become more confident, so that the pupils can simply get on with the job while being prepared to accept the benefits of getting it wrong first time.

A weakness of the system so far has been a lack of involvement of outside advisers. It is probably not feasible to ask people from industry to attend weekly company meetings between the hours of 9 and 5. The problem, though, can be alleviated by following the example of Kastex, with day-to-day advice being provided by teacher/advisers and the company calling on outside specialists, like the bank, when particular problems arise.

The publicity arising from the success of mini-companies in regional competitions and the increased contact between students and local industry through the running of their companies has done much to raise the awareness of the local community to the types of development taking place in the school since the introduction of TVEI. Without exception, the students have presented a professional (if rather raw) image and have received encouragement from those with whom they have come into contact.

The future

The number of students involved with mini-enterprise has increased steadily over the last two years. This has been as much due to the students' awareness of the opportunities and the 'fun' to be had from the experience as it is to the school's promotional activities.

Expansion seems set to continue and mini-companies are already extending outside the TVEI cohort. It is suggested that steady, organic, voluntary growth is preferable to some kind of 'star-burst'. The commercial aspects of mini-companies might not appeal immediately to all students, but the structure should be seen as a means to an end rather than an end in itself. The same basic system can be used to allow students to tackle a wide range of multi-tasked assignments like community projects and

conservation exercises and though the profitability element takes on less importance, the essential aims are still achieved.

Mini-companies did not originate with TVEI, nor have the funds available through the Initiative played much part in the development of mini-companies at the King Alfred School. But, importantly, it has raised the awareness of schools and teaching staff of the value of vocational and cross-curricular education and helped to create an atmosphere which gives mini-companies respectability.

7 TVEI links with the community in Durham

Dr Alan Stoker, the County Co-ordinator.

In the not too distant past, when education/industry links were the flavour of the month, teachers and industrialists alike were given a variety of reasons why they should set up joint projects and exercises. Very often, such links were high profile events and created a good deal of interest in the media over a limited period of time. But it is worthwhile asking who such links were designed for and who derived most benefit from them.

Too often, events were instigated without first asking this question, which would have helped to focus on activities which

- Were directly relevant to young people and would influence what goes on in the classroom.
- Encouraged a working partnership between teachers and industrialists.
- Raised the levels of mutual awareness and understanding between teachers and industrialists.

The introduction of TVEI provided an opportunity to construct links with the whole community, with industry being seen as one facet of this overall approach.

The start of the TVEI pilot in 1984 coincided with the introduction of a tertiary system in the Peterlee area of C. Durham. Six 11-16 comprehensive schools and a tertiary college are participating in the pilot exercise.

TVEI Developments

The Peterlee area has, over the past few years, seen some new industry coming on to its industrial estates, but these companies are generally quite small, with 50 or fewer employees. There is still, however, a high level of unemployment: it currently stands at around 20-22 per cent. (1987).

The Youth Training Scheme is the main employer of young people in the area. The following table is a summary of the destinations at 16+ of the 1984 entrants into TVEI.

Returned to full-time education	32.9%
YTS	50.4%
Employment	10.1%
Unemployment/unknown	6.6%

Where were we in 1984?

- Schools' links with local companies mainly involved visits, speakers and, in some cases, work experience. Difficulties in finding placements had led to a decline in work experience in most of the schools.

There were good contacts with the local community, as represented by nurseries, primary schools, voluntary organisations and the police force. There were no secondments of either teachers into industry or industrialists into schools. Curriculum planning and development groups did not involve people from local companies.

The tertiary college had more extensive links having been a traditional further education establishment which ran courses for local industry.

The Careers Service has always had close links with schools, but it is probably true to say that many teachers did not perceive them as an equal partner in the education service. Careers Officers regularly visited schools to interview pupils in the fifth year, but they had no official commitment to locating pupils on work experience placements.

The Careers Service has, together with teachers and local industrialists, been very active in establishing link organisations which aim to foster a greater mutual understanding between people in education and industry. Such organisations organise meetings, talks and competitions.

The Youth Training Scheme was not fully understood by many teachers, who expressed some concern over the standards of training and where YTS led to and some suspicion about the role of the Careers Service in placing young people. It has to be said that the majority of teachers were not particularly well informed about local YTS schemes.

In County Durham there had been a Science and Technology Regional Organisation (SATRO) since the early 1980s. There is a national network of SATROs, which are funded by local education authorities, the Department of Trade and Industry and companies. They aim:

- to develop links between schools, industry and commerce;
- to enhance the curriculum and give it relevance to a changing world;
- to initiate project work and competitions for pupils to encourage further activity in schools;
- to disseminate information through conferences, symposia and seminars.

SATRO activities include project work with primary as well as secondary schools.

An important link exists between many SATROs and Engineering Council Regional Organisations (ECROs). These latter organisations are often actively involved in promoting in pupils a greater understanding of engineering as a discipline and a potential career. This is frequently done through visits to schools and talks at careers conventions.

Where are we now?

TVEI is helping to build on past experience and is trying out new ideas and approaches to links with local companies and the community in general. One aim has been to legitimise such links and give them more credibility in the eyes of teachers, parents, pupils and industrialists. This may be done by integrating links into the curriculum, as a component of courses.

One example of an industry-linked curriculum activity which TVEI has supported is the Industry Week. SATROs frequently assist in organising such weeks, which involve a variety of activities like:

- work experience
- problem-solving events
- projects
- speakers and visits.

TVEI can help by funding specific items of equipment, pupil and teacher travel, and the production of a final report.

Increasing understanding amongst the community as to what is happening in schools is vitally important. Consequently, a group was set up, under the chairmanship of a headteacher, to produce a newspaper. The editorial panel consists of pupils from all schools and colleges in the area and reporters from a local newspaper. The 4-6 page publication is then included as an insert into the local newspaper and distributed to thousands of readers. Two editions which have been produced over the past year have included articles by pupils on courses, sports, enterprise work and other snippets of interest. In order to help pay for this publication, pupils assisted in selling advertising space. Further editions are planned and the group is also considering the production of a video recording about school and college activities.

Since September 1986, the six TVEI schools have been participating in the national pilot of Joint Unit Foundation Programmes for Pre-Vocational Studies. These programmes, which are organised jointly by BTEC and the CGLI, are aimed at 14-16 year-old pupils of all abilities.

The original reason for Durham TVEI participation was to gain accreditation for the 'core' which consisted of:

- Modular courses taking up 10 per cent of curriculum time.
- Work experience.
- Residential activities.
- Guidance, counselling and the Record of Achievement.

Foundation Programmes have a modular structure; each module consists of a single theme developed in a realistic context.

Contexts	**Themes**	
Business, Administration & Distribution	Money	People
Production & Technical Services	Technology	Arts & Design
Services to People		
Self and the Environment		

Thus it is possible to design 16 discrete modules. Their content and general approach should be relevant to pupils and, wherever possible, draw on local industry and the community as a resource.

We have to consider progression to post-16 courses and appropriate assessment procedures; the tertiary college is, therefore, fully involved in all developments.

Foundation Programmes conform to national criteria laid down in 'Report of The Working Party on Criteria for Pre-Vocation Courses Pre-16' (DES: June, 1986), often referred to as the Johnson Report.

We call the active learning situations which deliver modules (and must have integral assessment procedures) case studies. The following is an example of part of a case study on work experience produced by a group of teachers from all six schools and the Careers Service.

WORK EXPERIENCE – CASE STUDY

AIM: To develop an awareness of the work in the context of the local environment.

MODULE: Self and the Environment/People (it also covers other themes and can appear in a variety of contexts).

GENERAL OBJECTIVES:

1. To acquire some knowledge and understanding of a working environment.

2. To apply this knowledge and understanding in the place of work.

3. To explore the interaction of personal relationships; to understand and appreciate one's own position in a working situation.

LEARNING EXPERIENCES:

A Pre-work research
B Practical preparation before experience
C Work experience
D Evaluation and Assessment.

TASKS: These are described as what the pupil will be doing during each of the four learning experiences above.

CASE STUDY OUTLINE

WORK EXPERIENCE

TASK No.	TASKS	ASSESSMENT FOCUS	SKILLS REPORTED ON
1	PRE-WORK RESEARCH	HANDLING INFORMATION	1a. Interpret written information. 1j. Record information.
2	PRACTICAL PREPARATION	MAKING DECISIONS	4a. Select and use information for making decisions. 4c. Set goals and work out means of achieving them.
3	WORK EXPERIENCE	PERSONAL AND INTER-PERSONAL SKILLS	2d. Recognise dangers and adopt safe practices. 2j. Participate and work in groups and teams.
4	EVALUATION	SKILLS IN DESIGNING, MAKING AND CONTROLLING	3s. Apply knowledge to evaluate a process. 3h. Use conventions appropriate to a form of expression.

A PRE-WORK RESEARCH

- Self-assessment: realistic aspiration.
- Guidance in looking at job information.
- Why work?
- Skill awareness.
- Job awareness.

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- Attitudes and aptitudes.
- Equal opportunities
- Qualifications.
- Expectations about one's own work experience.
- Problems that may arise.
- Guidance.
- Health and Safety.
- Services and advice from other school departments.

B GENERAL PREPARATION

Display work experience positions on offer: pupils apply by using a standardised application form. They are interviewed by a panel of staff for the work experience placement. The panel might consist of:

- Careers staff.
- College staff.
- Employers.
- Non-careers teachers and others.

This provides a realistic situation because the pupil does not know the interviewers.

Where a pupil makes no choice, allocation by staff would take place, ideally, by means of a work practice/simultation/ or enterprise-linked unit. Careers and other interested staff could be involved in the initial activities helping with application forms, interviewing and the final selection of pupils for positions.

After selection pupils could be involved in some practical preparation towards work experience, possibly on a simulated basis.

A centralised unit would:

- Guarantee work experience for all pupils.
- Take the pressure off industry.
- Encourage industry to take part by providing staff, material or sponsorship.

Pupil Preparation

1. Where to go: routes, bus timetables, etc.
2. What time to start, food arrangements.
3. Presentation, dress, etc.

C WORK EXPERIENCE

The tasks must, to a certain extent, depend upon the placement, but some will be common:

- Relevance; they have a say in what is done.
- Both real and simulated work experience have parts to play.
- Employer education.
- Employer assessment; this will form part of the pupils' final case study.
- Regular visits and supervision by staff to help in co-ordinating the assessment of pupils' work.
- Feedback.
- To collate the maximum amount of information pupils should put together a handbook which will cover all aspects, before, during and after the work experience.

D EVALUATION AND ASSESSMENT

- Self-assessment: what did you enjoy?
- Did it live up to your expectations?
- Attendance/travel/punctuality.
- Attitudes of employees and employers.
- Equal Opportunities.

A great deal of this will appear in the handbook, which will require such subjects to be examined and reported on.

The TVEI Record of Achievement has, over the past three years, been modified in the light of practical experience. There are three sections to the Record:

A Personal qualities:	Attitude to others Attitude to study Creative interests Awards Sports and games Other interests Residential experience
B Core Competences:	Preparing and planning Carrying out tasks Recording and reporting Overall performance
C Subjects Studied:	Subjects studied in years 1-3 Subjects studied in years 4 and 5 Subjects studied as TVEI options Work experience Work experience Employer's Report (it must be a free statement) Post-16 Progression (a free statement arrived at by considering Careers Officer's report, tutor's comments and student's aspirations and ambitions).

All the statements are negotiated with the pupil and fed into a computer and the summative document is printed by means of a word processor. The Core Competence section has been developed over the past year to take account of the Skills Checklist included in the Joint Unit Foundation Programmes.

At present, this Record of Achievement is with YTS Managing Agents and local employers for comment. It is planned to set up a workshop to explore ways in which any suggested amendments can be made to the Record to take account of such comments.

A good working relationship with YTS managing agents is very important, because a substantial number of pupils go on to YTS schemes. There is an increasing need to improve mutual awareness and understanding between teachers and YTS staff. Methods of assessing and recording achievement should be seen as being useful for pupils when they leave school and enter YTS. Teachers need to gain confidence in, and learn more about, YTS training methods and see the appropriateness of student placements.

Some teachers have already visited YTS schemes and work experience placements are offered to pupils.

We are now looking to plan some joint in-service work which will also include the Careers Service. This initiative falls in line with the recommendations of the DES/DoE paper 'Working Together For A Better Future' (1987).

In looking to the community in a wider sense, we place a great deal of significance on the recent development of links with Beamish Open Air Museum. A number of meetings have taken place between the Museum's Education Officer and TVEI Co-ordinators which have resulted in

- a meeting of teachers involved in textiles to devise project work for pupils;

- a meeting of education advisers to discuss the use of a pit cottage and other facilities for drama, role play and media work.

Beamish Museum has also offered the opportunity for pupils to do design and communication work related to 'Special Events' days like a steam engine rally.

The SATRO in Durham is becoming more involved with TVEI. Planned for the near future are

- A competition for third year pupils on enterprise/design which is partly funded by the DTI and ECRO. Judges will be drawn from industry.
- Modern Languages work on collecting authentic materials, especially for use in GCSE. There is a link here with New College, Durham, and a possibility of teacher secondments.
- 'Opening Windows on Engineering' scheme with the ECRO. Young engineers visit schools to talk to pupils about their work.
- Students from the Engineering Department of Durham University talk to pupils about their choice of course and future prospects.
- Young Engineer Clubs and CREST (Creativity in Science and Technology) awards.

Copies of the TVEI Record of Achievement have also been sent to the SATRO and ECRO for distribution to interested parties.

Finally, TVEI is a member of two small business clubs in Peterlee and Durham. One of the Durham member companies has offered the facility of producing a short promotional video recording. This could well be linked to the work of the newspaper group.

8 'The Cake Crew' enterprise in Lincolnshire

A report on a mini-enterprise by Carol Dutton, a teacher in William Harrison School and Robert Mayall, Specialist Careers Adviser (TVEI).

This article outlines the development and evaluation of a mini-enterprise at the William Harrison School, which caters for students with moderate learning difficulties; thirteen students between the ages of 14 and 16 participated in the project.

The school is one of several in the Gainsborough consortium, which forms the Lincolnshire TVEI pilot project.

The writers say that the experience has convinced them that mini-enterprise is an appropriate and challenging curriculum activity for all students, irrespective of ability level.

The Context

In their final two years at school, students follow a leavers' programme which includes periods of work experience. The programme has introduced many worthwhile experiences, but is essentially teacher-directed.

A desire to move towards more participative, pupil-centred, approaches to learning led us to consider mini-enterprise as one of a number of ways in which students might demonstrate and develop academic and social skills in real-life situations with minimal teacher direction.

A broad definition of mini-enterprise is 'A group of young people who organise themselves to produce and/or sell a good/service to the local community as part of their education programme' ("Mini-Enterprise" YTV Publications 1986).

Our rationale of education through enterprise assumes that it is about helping young people to work together, communicate, and generally

become more positive about themselves and more aware of their ability to cope in a variety of situations. The potential learning outcomes of mini-enterprise are manifold. We planned to develop a range of transferable skills in the pupils: these included learning to work as part of a team, learning how to budget, developing decision-making skills, learning to communicate effectively, developing the ability to apply learning to real life situations.

A structural approach

We planned the project in three phases.

PHASE ONE

> The introduction of participative methodologies, working in teams, problem-solving, decision-making, gaining awareness of strengths of self and others, developing the necessary skills of co-operation and communication.

In this phase the content of the exercises was much less important than the methods used, which were the real key to achieving our aims. Students were grouped at the beginning of each session. We chose exercises which ensured that groups were truly random rather than teacher-selected. In order to create an appropriate learning atmosphere, we used methods which encouraged student participation and inter-communication.

They took part in a number of problem-solving activities like building a paper tower/bridge: these often involved a shared use of limited resources. The value of the exercises was increased by building in adequate time for planning and, particularly, de-briefing, which gave us a real chance to consolidate the learning which had taken place.

PHASE TWO

> The application of skills to work simulations and observations and analysis of skills in production environments. Techniques of production; single-skilled versus multi-skilled working; working to targets, quality control, concepts of profit and loss.

Now that students had started to develop skills of teamwork and problem solving, we thought that it would be valuable for them to observe these skills in work situations.

They visited a company which produces electric motors and saw production lines in operation. They also visited a factory which manufactures timber frames for windows: there pupils observed a much less automated production area and less formal teamwork in action.

Before these visits students prepared their own topics and questions. They discussed how to introduce themselves to their hosts, how to thank them and to conclude the visits. We considered it important to help them to develop such social skills and to give opportunities for the students to work in teams before, during and after the visits.

As in Phase One, de-briefing was necessary and valuable: it allowed students to share their perceptions and evaluate the learning that had taken place: to concentrate on their own performances during the visit and to comment on what they had seen and heard.

Teams of students now practised production. After some basic training, teams were given the task of setting up a production area to manufacture paper darts to a minimum standard, with target figures and time restrictions.

This exercise was repeated several times. Each time a different concept was introduced. We simulated absenteeism (pupils were withdrawn from production lines): hierarchies (supervisors, quality controllers were appointed): profit and loss (introducing the idea of unit production costs, fixed/variable costs).

There is considerable potential at this stage for the development of some of these concepts into other curriculum areas.

Video recordings were made of the production exercises and these were used in de-briefing.

Gradually teams evolved swift, efficient methods of working. Students began to match individual skills within their teams to the requirements of particular jobs, and this was an important factor in the subsequent success of the company.

PHASE THREE

(a) Planning: brainstorming, finance, market research, costing, advertising.

(b) The production process: producing, selling, accounting, evaluation.

(a) PLANNING

Brainstorming

The students put together a number of ideas for an enterprise. By considering the practicality of each idea, noting their own personal skills, available resources, and possible markets, they focussed on a smaller number of ideas. Debate and a ballot decided the choice of enterprise. It would be a cake manufacturing company which would retail its produce from a number of sales points in the area.

A similar brainstorming process decided that the name of the company would be 'The Cake Crew'. Such sessions gave each student the chance to be heard and involved, and develop an ownership of and commitment to the enterprise.

Finance

The group considered various options for raising funds to start their company; these included selling shares and obtaining a bank loan, but they finally decided to obtain a loan from school funds.

Market Research

They chose a selection of recipes which could be adapted to produce a wide range of goods, then approached various local firms and planned visits to discuss their enterprise and the possibility of selling their goods on their premises. This involved the students in composing business letters, making telephone calls and communicating effectively with senior personnel in order that their venture should be taken seriously. These initial contacts produced a number of sales outlets, which had to be timetabled into the production week, with set dates and times for each outlet.

The students compiled a questionnaire to research market tastes in cakes. They took these questionnaires, together with a tray of samples, to the sales outlets. Although the students found this exercise daunting, it was invaluable in bringing them face to face with their potential customers. They returned from the exercise with much increased self-confidence and enthusiasm.

Costing

The students visited local shops to find out the prices of products similar to their own. Then they compiled a list of all the ingredients to be used and calculated their costs in units of 10g. From this list they were then able to calculate the precise cost of producing each recipe: this involved them in learning new maths skills.

They fixed their selling prices at a figure between their production cost and the prices charged by their competitors. In order to minimise problems with handling money they rounded up their selling prices in units of five pence.

Advertising

The students produced a variety of advertising materials, ranging from large colour posters to small handbills. They had their own headed letter paper, calling cards, identity badges and courtesy slips all bearing their own design and motto, "The Cake Crew – will come selling to you." The large posters were individually produced by hand and the lettering demanded care and skill. Other materials were produced using the word processor, printer and photo-copier; this fully utilised and extended the skills of the students.

(b) PRODUCTION

The company operated for one week, during which time the students were actively involved in shopping, baking, packing, delivering, selling and accounting. The success of the operation demanded the co-operation and willingness of all the students to work as part of a team and to support one another throughout the various activities. Each student took a turn at the less attractive tasks, such as washing the pots, and also had an opportunity to take a turn at selling – the most appealing task. This sharing of tasks enabled each student to appreciate more fully the importance of the inter-relation between every task and role.

The earlier preparation of various lists for shopping, quantity checks, stock-control and accounting greatly assisted in the smooth running of the company.

Selling

For the majority of the students the selling was the highlight of the enterprise. These sessions required them to communicate effectively with various 'strangers' in order to set up their pitch, and to adopt a pleasing manner when dealing with their customers.

Some found this need to communicate quite daunting, but as the week progressed it was possible to observe a vast improvement in their self assurance and their ability to deal with people. There was also a marked improvement in their ability to handle money.

Accounting

It was imperative to keep accurate accounts of expenditures and monies received, not only to safeguard the reputation of those involved in handling the money, but also to ensure that the company was not running at a loss. It was possibly the most difficult aspect of the company to manage and yet, with minimal help and the use of various forms devised in the planning stages to assist with the task, they succeeded in recording the accounts accurately. They began to acknowledge each others' strengths and weaknesses and developed a very successful working relationship.

Evaluation

This included completing the final accounts, banking the profits and writing letters of thanks. Of greater importance was their own appraisal of the enterprise, the discussions they had about the process and how it might have been improved and about the roles played by particular pupils. One-to-one discussion with pupils led to the development of material for their record of achievement.

Key elements of the enterprise

In evaluating this year's experience and planning others for the future we have identified a number of points which we feel helped to make the enterprise a success.

The three-stage learning process is important if one hopes to maximise the value of the project. Each stage builds on the one before and unless schools have already adopted active tutorial working methods, or similar approaches to learning, then Stage One provides a particularly important foundation.

Planning and de-briefing

Prior to each session, the group discussed the problems they faced and they debated various ways of working before finally tackling the exercise. During this planning stage they learned to listen and to consider each others' views before deciding collectively on a plan of action. Each member of the group was encouraged by the other members to make some contribution at this stage. This sometimes resulted in the ideas of the quieter, more reluctant, members being adopted, which in turn

boosted their self-confidence and encouraged future contributions. Once a plan had been agreed upon, the group tackled the set exercise. Their activities were often filmed using a video camera. Upon the completion of each exercise the students held a de-briefing session. They commented upon individual performances, and discussed ways in which they might have been improved. This session often included the video recording, which provided evidence to support the criticisms – this proved to be an invaluable resource.

These planning and de-briefing sessions should be an integral part of each exercise and must be included if the learning process is to be maximised.

The teacher's role

We have concluded that there must be considerable flexibility in the interpretation of the role of the teacher. It was clear in the planning stage of Phase Three that students needed a considerable degree of guidance and support as well as frequent prompting; it required a more directive role for the teacher. As competence and confidence increased, so the teacher could reduce support.

The key factor in this strategy is the ability to judge the appropriate degree of support needed at each stage in the process and this means a frequent appraisal of pupil progress and a re-adjustment of the levels of support provided.

Integration (Stage Three in particular)

Mini-enterprise offers an ideal opportunity to take learning across the curriculum. At the very least, a number of normally subject specific skills will be combined and applied by the pupils. It could also call for contributions from school departments. At William Harrison, skills were developed in relation to Art (package and poster design), Information Technology (designing a logo, printing of labels/posters and so). They used Mathematics (costing exercises, simple accounting skills, profit and loss), English (communication skills are exercised and developed throughout the whole project); in this exercise there was considerable emphasis on food and nutrition.

Conclusion and Personal Reflection

Statements made by pupils for inclusion in their record of achievement indicated that the project had been worthwhile for them.

"I think it was a very good business. I liked it when we went out to the places, but it was very hard work."

"I think running the Company helped me to deal with people. I enjoyed doing the packing and the market research. When I first went out to do some selling I was a bit scared, but then when I went selling the second time it felt a bit easier to talk to people."

"I think the mini-enterprise has given me confidence to do things. We worked really hard all week."

"I think the mini-enterprise helped me to have more confidence to deal with people, and it gave me lots of new experiences."

Although it was widely agreed that the enterprise had been a huge success, there had been more than one occasion in the planning stages when we wondered about its feasibility. We had only allowed a limited period of time for the preparation of the company. Everything had to be fitted in around other time-tabling commitments, in short disjointed sessions. Although the students worked flat out, their limited skills hindered the swift execution of various necessary tasks like letter-writing and costing. This limited ability of the students, together with the need to maintain high standards of presentation at all times, meant that the various stages were completed very slowly.

This caused some unnecessary tensions which could have been avoided had we allowed more time for the planning stages. Happily we managed to overcome these problems, pulling together in a true team spirit.

The teaching staff have acknowledged the success of mini-enterprise and there is now some agreement that we should re-think our current curriculum in order to integrate similar projects in the future. The enterprise has generated a new interest in the work of the school, by both the students and the staff.

In the beginning we set out a list of neat educational aims for the enterprise. At its conclusion we had not only achieved these aims, but had opened doors to much more than we had ever anticipated. The impact on pupils and teachers alike has been tremendous and we believe the potential value of projects of this kind presents a very real and exciting curriculum planning challenge for the future.

9 Work experience: an evaluation

Terry McIntyre and Helen Coombes of the TVEI Unit's Evaluation Section remind us that although the TVEI criteria indicate that appropriate planned work experience should be an integral part of the programmes devised by local authorities, there is no national specification of what objectives or arrangements should be adopted. Local authorities, and the schools and colleges taking part in projects, have therefore been required (implicitly or explicitly) to interpret for themselves the purposes of the work experience which is offered as part of TVEI students' curricular activities.

This paper summarises the initial findings and conclusions of national and local evaluation reports and comments on some of them. Inevitably, at this stage of the evaluation programme, findings relate largely to aspects of 14-16 provision in the Pilots.

Readers' attention is drawn to the reports referred to in the text; details of these are given in the Appendix to this article.

WORK EXPERIENCE PLACEMENTS AND ACTIVITIES

Number and type of placements

Work experience is by no means new to schools and colleges, though reports suggest that TVEI has stimulated and broadened the range of such activities. A national survey of TVEI students in their fifth year during the Spring term of 1986 showed that about 80 per cent had completed at least one week of work experience.[1] A local evaluation survey covering 12 TVEI schools found that while 54 per cent of TVEI students had undertaken work experience, only 30 per cent of a non-TVEI comparison group within the same schools had done so.[2] A special study

commissioned by the TVEI Unit has illustrated how work experience is now being incorporated into the 'academic' education offered by sixth forms and colleges.[5]

In the national survey the most frequently recorded industrial/occupational locations for work experience were found to be in:

- administration, clerical and office work (banking, local government, insurance and building societies);
- manufacturing, assembly and processing (foundries, engineering and plastics companies);
- caring, community, education and health care (nurseries, old people's homes and hospitals);
- retail and sales (shops and supermarkets);
- installation, maintenance and repairs (the engineering and vehicle repair and maintenance industries).

It is difficult to assess the extent to which TVEI work experience placements reflect current or future employment opportunities. Much depends on the perceived aims of each project. The 16-18 report[3] indicates that answers to questions on the subject are likely to vary, not only according to the stage of education reached (pre- or post-16) but also to the type of course followed, 'academic', 'vocational' or 'pre-vocational'.

Availability of placements

The national survey suggests that, as might be expected, the types of placements secured for TVEI work experience depend largely on what is available in the immediate locality.[1] The character of the local economy in which the project operates (declining or 'sunrise' industries, manufacturing or services and so on)[6,7] largely determines the availability of placements, as does the extent of local competition from other agencies such as YTS.

Sex-stereotyping

National and local evaluation reports indicate strong gender divisions within the placements obtained by students. Boys tend to be concentrated

in the manufacturing, installation and maintenance fields, girls tend to go into the caring services and office work. Indeed, when actual placement activities were examined (see below), the national survey report concluded that the sex-stereotyping of education-based work experience was even more pronounced than than the occupational/industrial classification of those jobs suggested.[1]

This is in part due to a lack of encouragement for students to experiment in their choice of placements, the pressure of peer-group opinion, parental influence, established recruitment practices in companies and the influence of employers. However, as with the broader problem of sex-stereotyping in education, the very complexity of the processes appears to preclude any simple cause and effect explanations.

Opportunities to work with or 'shadow' people in 'higher level' or 'more responsible' positions tend to be limited to students taking traditionally 'academic' courses.[3,4] In some cases there may be specific reasons for matching work experience to particular forms of education – in post-16 vocational courses for example. As a general principle, however, such practices can reinforce gender-based divisions and even create or strengthen stereotyped expectations about future careers.[3,5]

Placement activities

Work experience can include:

- work practice (the temporary simulation of an existing job);
- work creation (setting up a new job solely for the purpose of the placement);
- work shadowing (observing an established employee at his or her work);
- 'real' work (participation in the normal activities of the company).

One national evaluation report[2] observes that most placements covered by the study offered the opportunity for 'real' work. The wider national survey[1] found that although students were sometimes allocated tasks that fell below their expectations, few regarded themselves as having been given 'dogsbody' work. Work experience turned out to be a 'realistic' venture for the many students who have been able to participate in the

normal work of companies.

One report on 14-16 provision has identified, through case studies, three discrete ways in which students may participate in work and suggests how each may afford opportunities for learning.[5] These are:

- *work tasting* – where the student experiences a range of activities representing different aspects of the work of the firm – enabling students to acquire a general understanding of how different activities inter-relate within the overall concerns of the organisation;

- *worker role* – where the student takes an existing job and is able to obtain a realistic and contextual experience of what is required;

- *fragmented activities* – where random, low level tasks are given to keep the student busy or where he or she has little or nothing to do; this, naturally, offers limited opportunities for learning.

Preparation and follow-up of placements in schools and colleges and the quality of the 'on site' tuition given (particularly the more informal support and advice provided by the student's immediate working colleagues) can be important influences on learning outcomes. The 16-18 study also identifies the importance of the student's attitude to the placement.[3]

The national survey report[1] suggests that jobs have typically been allocated from within a restricted range of rather routine shopfloor or office occupations. Such jobs offer students limited opportunities to exercise discretion or to develop work-related skills. Some employers say that this is because work experience is too short; given the competition for placements it might be advisable to explore other forms of 'work experience' including some of those listed above.

Organising work experience

TVEI work experience placements have been organised in a number of ways:

- through outside agencies (principally Project Trident);

- by specialised local authority staff (such as the Careers Officer, a Schools Industry Liaison Officer or a Community Liaison Officer);

- by schools staff (often from particular vocationally-oriented subject areas or by school co-ordinators);

- by students themselves (usually with some form of school support such as a list of vetted employers). One or more of these can be employed by an authority.

National evaluation reports[4,6] have identified various strengths and weaknesses for each of these organisational methods. Outside agencies or authority staff are able to take much of the administrative burden off schools and offer a centralised procedure for allocating placements efficiently and (as far as it is possible) in accordance with students' preferences, but they can tend to isolate teachers from the students' work experiences and thereby undermine their capacity to exploit it fully as an educational resource.

Although it is easier for school staff who are actually organising work experience to integrate it with classroom activities, this can impose a heavy burden on individual teachers. Too much responsibility can be placed on teachers who have neither the time nor the resources to organise and monitor placements effectively.

The 16-18 study[5] reports an interesting example of how responsibilities can be shared between course tutors (who undertake pedagogic aspects like matching students to placements and discussing the relationship between courses and placements) and the college work experience co-ordinator (who briefs students on operational aspects such as punctuality, dress, transport, health and safety). Some reports have suggested that there is a need to allocate specific periods of time to those teachers who take on such responsibilities.

The decentralised organisation of work experience in schools can also lead to wasteful duplication and competition for 'good' placements. This is likely to happen when they are organised either by teachers or by the students themselves. In the latter case they may need a lot of support and guidance about the quality of the placements they should seek. Nevertheless, there may well be significant motivational and maturational benefits when students are expected to assume such reponsibilities for themselves.

Participants' views

Teachers

A number of evaluation reports indicate that many teachers, especially those directly involved in organising work experience, regard it as a valuable activity. Others, particularly those who teach the more 'academic' subjects, may be more sceptical.

National evaluation reports[4,5] have remarked on the range and complexity of teachers' views concerning the benefits of 14-16 work experience including:

- Students are able to compare the 'world out there' with the classroom; they are provided with a 'taste of reality'. The evaluators found this to be the most commonly-cited purpose of work experience, though it has to be said that there was little evidence in classroom observations of placements being referred to or utilised by teachers.

- Students can explore and test their own vocational preferences. The report notes that there were many examples of placements being organised explicitly for such purposes and that students' preferences were generally taken into account in the allocation procedures.

- It enriches students' education in school through the integration of work experience with classroom learning, although there was little to suggest that this was being achieved to any significant extent.

- It fills to some purpose what may otherwise be called 'wasted time' for particular students. In some places, work experience was offered as a legitimate way of motivating 'problem' students or filling the post-examination vacuum during the summer term.

The report concludes that teachers involved in the study generally saw work experience primarily as a resource for informing students about the world of work and as a way of looking at employment possibilities.

One national report[5] has identified three approaches to using 14-16 work experience in different areas of the curriculum.

– To place it in curricular areas expressly concerned with the personal development of students (PSE and tutorials for instance) to boost

their self-confidence and ability to communicate with others.

- To develop knowledge about the world of work in order to enrich the subject matter of (say) Business Studies or 'World of Work' modules.

- To introduce it in subjects which seek to promote a broader understanding of work in its wider context, or its relationship to other aspects of students' lives, like English and Humanities.

The report provides detailed examples of these approaches. Where integration has been sought, however, it has tended to be rather fragmented and often limited to the efforts of those teachers responsible for organising the placements.

The 16-18 study [3] is broadly supportive of such conclusions. Only in pre-vocational provision was it found that preparation and follow-up were being organised to any significant extent. This was particularly the case in CPVE courses where there was a strong element of, and commitment to, personal and social education (PSE) and greater flexibility in timetabling. Where integration was being achieved in 16-18 provision it was more likely to be through links with PSE rather than in specific subject areas.

Reports also indicate widespread concern among teachers about the disproportionate amount of time spent on the 'narrower' (but possibly more immediate and pressing) concerns of organising and contacting employers, monitoring, briefing students on punctuality health and safety etc; debriefing and assessing work experience as a discrete extramural activity. Besides stressing the organisational difficulties of time and time-tabling, which may significantly draw their attention away from wider issues, teachers tend to highlight problems like devising effective log books or diaries to encourage students to record activities during their placements and to establish ways of accrediting work experience.

Many teachers and lecturers do not see the establishment of explicit links with the curriculum to be a central issue; see reports [3, 4 and 5] They clearly find it difficult to integrate work experience with the mainline school or college courses. The traditional autonomies of subjects and departments often contribute to the difficulties of integrating work experience as they do, of course, to the much wider issue of cross-curricular links in general. One local evaluation report has suggested that the effective use of work experience in school and college courses may require a more active utilisation of interactive, problem-solving

methodologies in teacher training. Some teachers appear to be aware of this need.[3]

Employers

Evaluation reports indicated a wide range of reasons for employers providing work experience: for some it constituted a civic duty; for others a way of establishing contact with young people who may become employees; a means of promoting the company to the public was also cited by some. Yet others became involved simply because they were asked to![3,8]

Whatever the reasons for participating, employers generally regarded students on placement in a positive manner and believed work experience had a considerable impact upon them, particularly personal and social development. In reported interviews, employers referred to 14-16 work experience as a way of developing in students attributes such as initiative, motivation, discipline, maturity, flexibility, punctuality, confidence and resourcefulness. Improvements in work-related skills were rarely mentioned for 14-16 year olds, though, at 16-18 this aspect was given greater significance in employers discussions.[1,3]

Many employers were reported to be unwilling to provide greater practical support to schools and colleges – for example by becoming involved in briefing and debriefing students. They also had little specific knowledge of the courses students were taking and how the placement related to them. The special study[3] emphasised the need to develop more effective communications between employers and education. Some projects have explored the use of work experience working parties, workshops and conferences to try to improve the links and gain greater understanding of the problems from each side.[6]

Students

Whatever kind of work they have been asked to do, students seem generally to have enjoyed their work experience. In a report of a local evaluation survey covering 12 projects[2], over 90 per cent of both TVEI and non-TVEI fifth year students expressed this view. They also appear to have generally regarded their placements as useful, though their attitudes vary according to the stage and type of education they are pursuing. The national survey report[1] set out the percentages of positive answers ("very much" or "quite a lot") to questions about the value of

work experience:

- learning how to work with other people 89%
- experiencing a full day's work 86%
- gaining self-confidence 84%
- experiencing the world outside school 79%
- discovering how companies work 78%
- discovering more about jobs 76%
- choosing a job 69%
- getting a job 52%

The local evaluation survey[2] provides strikingly similar conclusions for this age range. 89 per cent of the student sample thought work experience helped them to understand what work was like and over 87 per cent considered it helped them to get on with adults. Only 54 per cent regarded their placements as a pre-employment taster of the type of work they wished to do after leaving school.

The special study of 16-18 provision,[3] however, puts the vocational aspect much higher in the students' scale of priorities: it says they tend to use work experience in the context of their career aspirations. Those on 'academic' courses seek to sample possible employment opportunities: their peers taking 'vocational' and 'pre-vocational' courses seek to confirm their career choices or to acquire recorded experience of particular kinds of employment.

Students, therefore, appear to regard work experience as both enjoyable and beneficial, giving them the opportunity to experience and explore working in an adult (as opposed to a 'schooling') environment.

Conclusions and issues

This overview of evaluation reports received so far shows that:

- TVEI appears to have stimulated and broadened the provision of work experience in the schools and colleges involved;
- there has been a marked degree of sex-stereotyping in the allocation of placements;
- work experience usually appears to have been 'realistic' through its involvement of students in the normal work of companies;

- owing to various restrictions, placements have tended to consist of the more routine office and shopfloor jobs;

- while work experience has been organised in a number of ways, in most cases there appears as yet to be little integration with school and college-based studies;

- schools and colleges have generally regarded work experience as beneficial, though they have often experienced difficulties in organising placements; staff have drawn attention to the problems of resourcing and timetabling the necessary briefing, monitoring and debriefing procedures;

- employers have generally considered work experience to have had a marked and beneficial impact on the personal and social development of students but they do not often offer adequate support for schools and colleges in briefing and debriefing students;

- students have typically regarded work experience as both enjoyable and beneficial for their own personal and social development and, particularly in the 16-18 phase of TVEI, for testing or pursuing their own career aspirations and ambitions.

It has also brought to light a number of recurrent issues which include:

- the *purpose* of work experience (the need to establish priorities for different stages and types of education);

- *securing* and *allocating* placements (problems of competing for limited placements and the preponderance of sex-stereotyped provision);

- the *nature* and *duration* of placements (causing students to be restricted to more routine and mundane tasks);

- *monitoring* placements (problems of time and cover);

- *briefing* and *debriefing* students (the difficulty of co-ordinating placements, of finding sufficient space in the timetable, of devising useful diaries and of securing employer involvement);

- *assessing* work experience (establishing objectives and criteria for the performance of students);

- *integrating* work experience with the school curriculum (difficulties caused by rigid timetables and syllabuses, the traditional autonomy of subjects, and the difficulty of developing ways of exploiting such activities in the classroom);

- *liaison* with employers (it is not always easy to communicate with large organisations and to identify and disseminate the aims of work experience).

- *schedule* placements (a tendency to marginalise work experience by placing it at the end of the academic year makes integration and follow-up activities difficult to organise).

Note: A more detailed version of this report is available from Dr McIntyre at the TVEI Unit.

APPENDIX

1. David Simms (July 1987) 'Work Experience in TVEI: Students Views and Reactions – A Preliminary Study' in NFER National Evaluation Team. *The TVEI Experience: Views from Teachers and Students* (National Foundation for Educational Research)*

2. Murray Saunders (1987) 'At Work in TVEI: Students Perceptions of their Work Experience' in Denis Gleeson (ed.) *TVEI and Secondary Education: A Critical Appraisal* (Open University)

3. Alison Fuller (August 1987) *'Post-16 Work Experience in TVEI: A Report to the MSC* (Institute for Research Post-Compulsory Education, University of Lancaster)*

4. Leeds National Evaluation Team (July 1987) 'Work Experience' in their *The TVEI Curriculum 14-16: an Interim Report Based on Case Studies in Twelve Schools* (School of Education, University of Leeds)*

5. Leeds National Evaluation Team (November 1987) *Work Experience: TVEI 14-16* (School of Education, University of Leeds)**

6. David Simms (1988) 'School-Industry Links: TVEI and Strategy Development' in NFER National Evaluation Team. *TVEI: Perspectives* (NFER)**

7. TVEI Unit (1988) *'Links and Transitions within TVEI'*, report of a Joint Dissemination Conference of the TVEI National Evaluators held at York in January 1988*

8. Chris Shilling (1987) 'Work Experience and Schools: Factors Influencing Participation of Industry', in *Journal of Education Policy*, Vol. 2, No. 2.

* Available from TVEI Unit (A3)
(see back cover)

** Forthcoming at time of going to press; will be available from TVEI Unit (A3)

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